

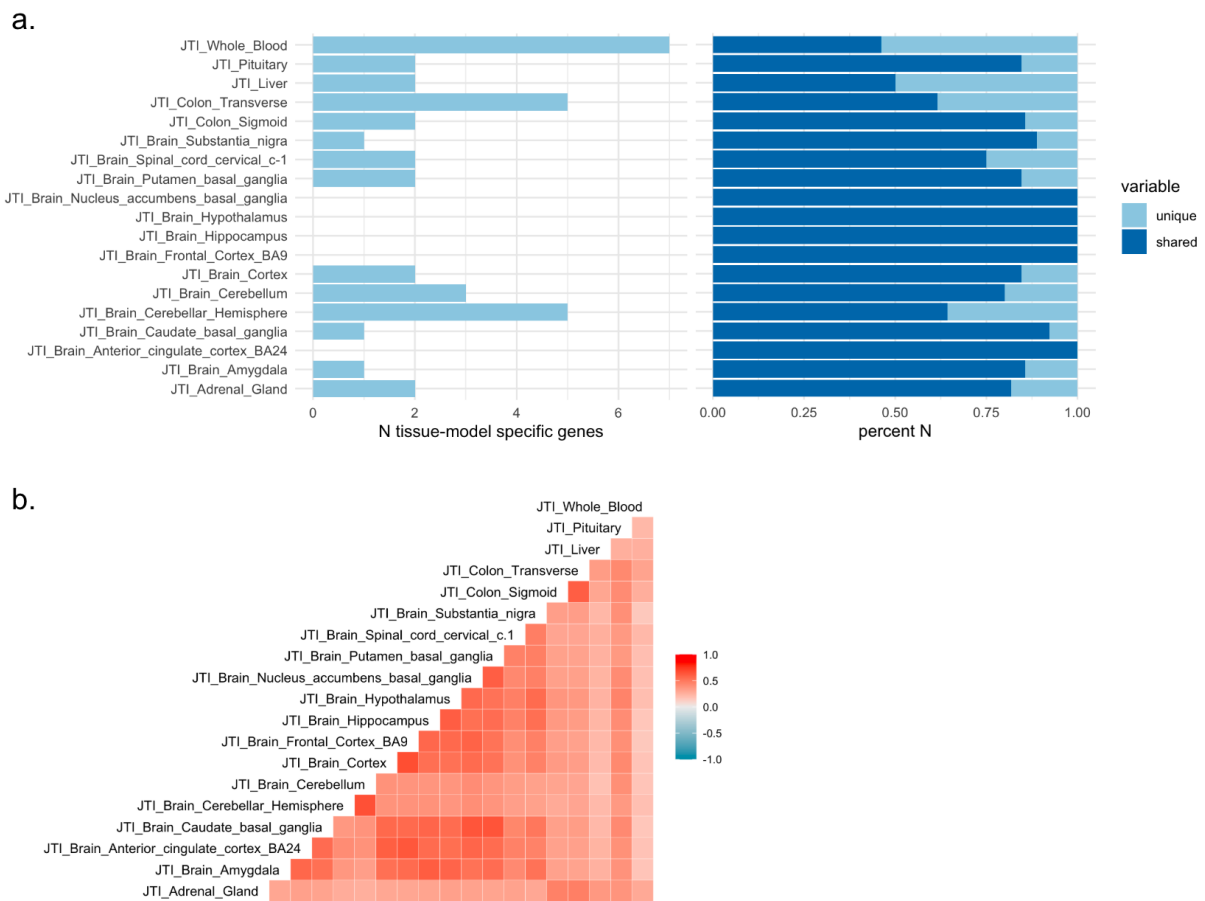


Figure S1: Comparison of model performance in discovery TWAS of PD

a. This two-facet panel shows the relationship between each tissue model and the number of statistically significant TWAS results that are specific to that model. The left facet shows the absolute number of GReX-PD associations that are unique to each tissue model. The right facet shows the proportion of total significant associations per tissue model that are unique to that tissue model.

b. The heatmap shows the Pearson correlation coefficient in z-scores between pairs of tissue models for the PD-TWAS associations.

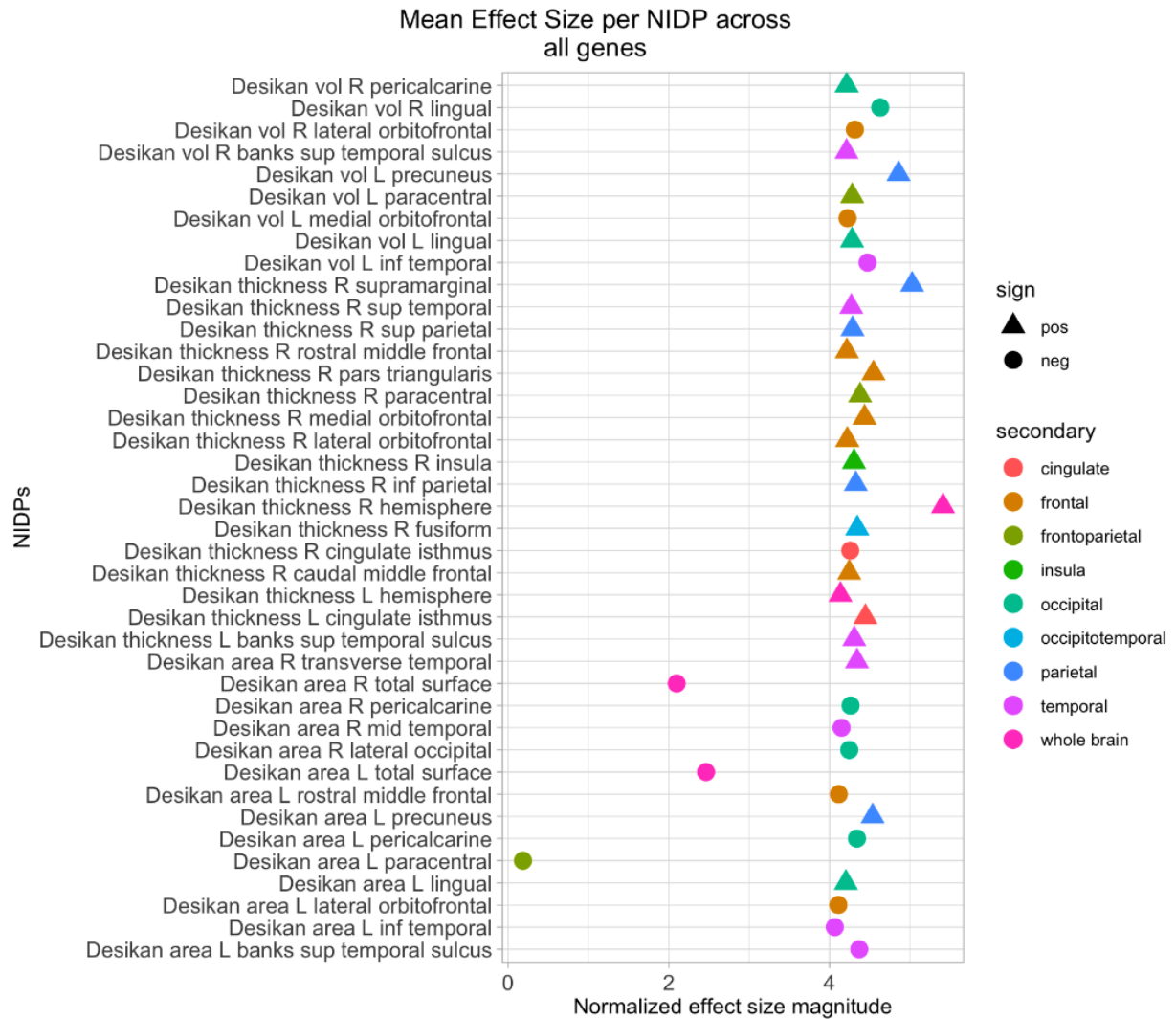
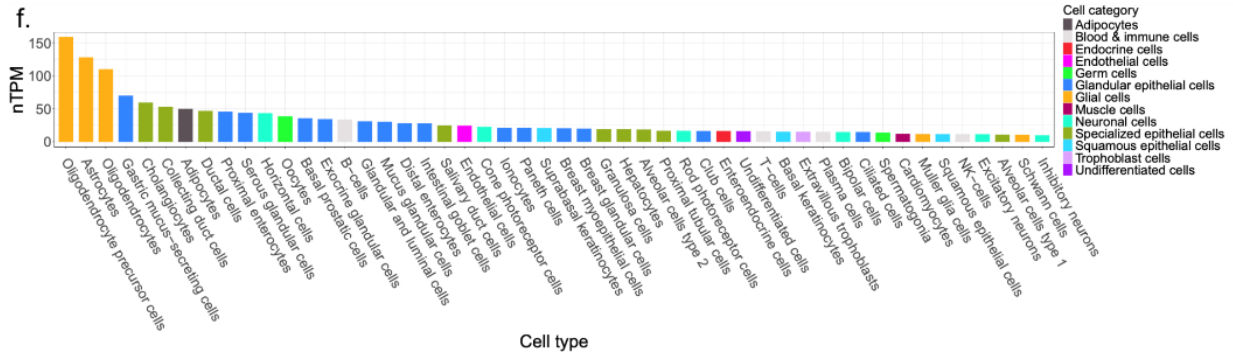
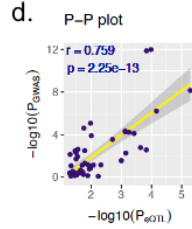
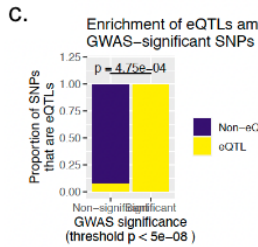
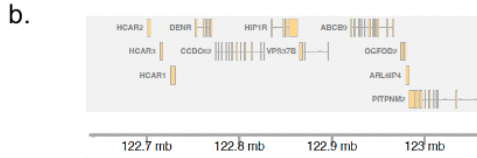
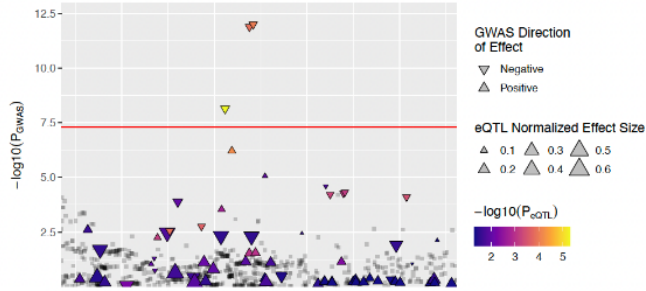


Figure S2: Dot plot detailing the mean normalized effect size of PD-associated GReX on Desikan cortical measures as detected in the UK biobank. The color of the points represents the region of the brain from which the NIDP is derived. All FDR-significant NIDP associations are described.

# **eQTLPlot analysis for PD and ENSG00000130787 In Brain\_Caudate\_basal\_ganglia**

a. GWAS of PD, colored by eQTL data for ENSG00000130787  
(Significance thresholds: GWAS,  $5e-08$ ; eQTL, 0.05)



e.



Figure S3: Variant Prioritization of GWAS hits implicates *HIP1R* in PD.

a. Expanded plot of *HIP1R* locus. The points are PD-associated GWAS SNPs with the negative log10 of the p-value on the y-axis. Points are colored according to the significance of their association with the expression of *HIP1R* and sized according to eQTL effect size. Red line represents the GWAS significance threshold of  $5e-08$ .

b. Distribution of genes in the *HIP1R* locus.

c. Distribution of SNPs in the *HIP1R* locus evaluated for association with PD grouped according to GWAS significance and colored according to eQTL identity for *HIP1R*.

d. Scatter plot detailing the association significance of specific SNPs with both PD (y-axis) and the expression of *HIP1R* (x-axis). Points towards the upper right quadrant demonstrate the greatest statistical evidence for shared causal variants for the two traits.

e. CoRE-BED annotations for eQTLs associated with PD-associated genes from TWAS. Tiles are colored according to the predicted chromatin element in which the eQTL is located.

f. *HIP1R* RNA expression in nTPM across multiple cell types from the Human Protein Atlas single-cell gene expression data. Columns are colored according to the category of cells analyzed.

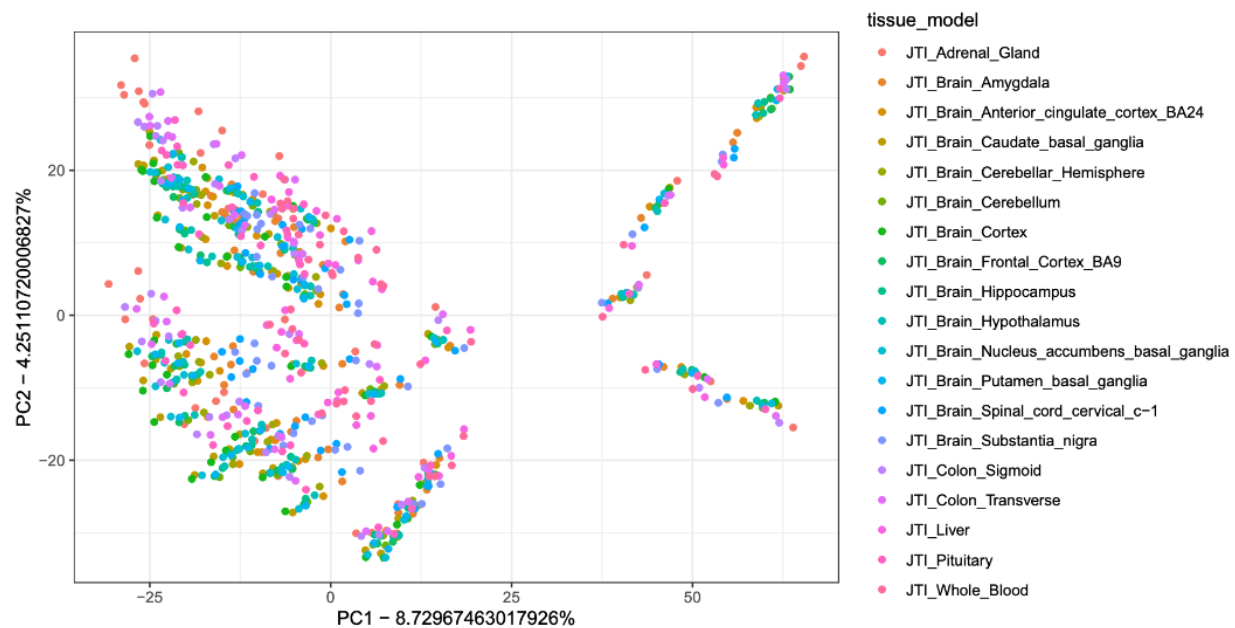


Figure S4. PCA scatter plot of clinically ascertained PD cNIDPs based on transcriptomic associations. The X and Y axes represent the first and second principal components respectively. Points are colored according to the tissue-based gene expression model in which the associations are called.

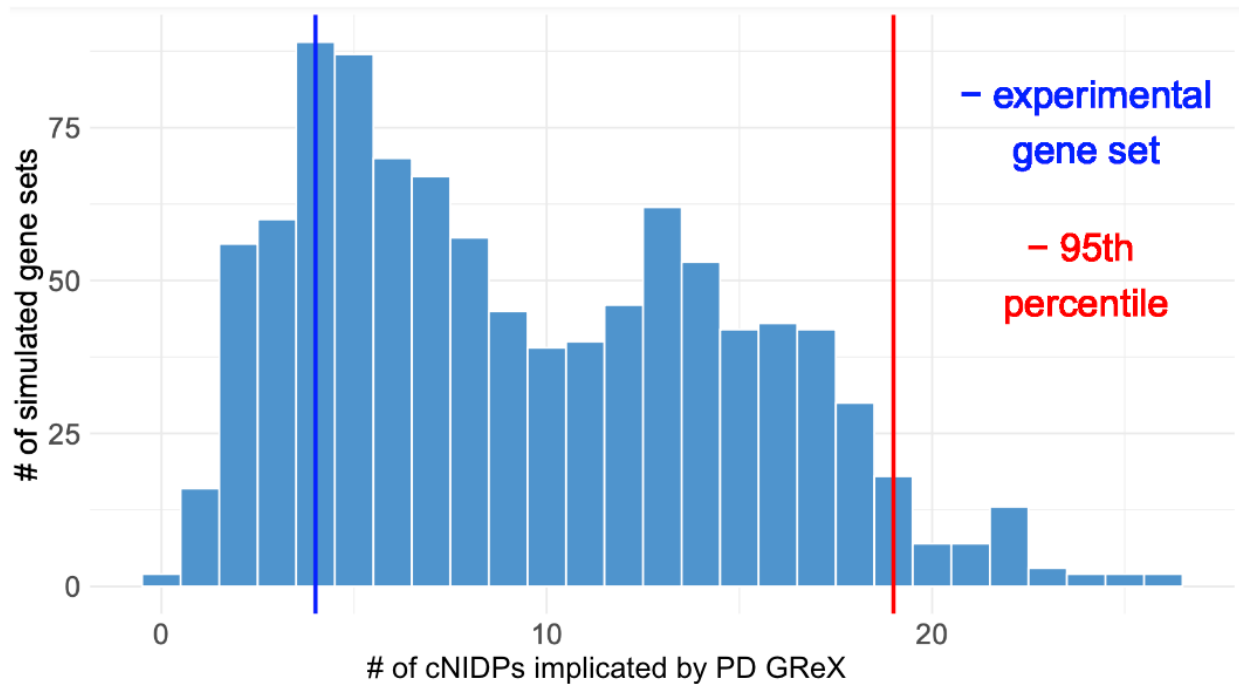
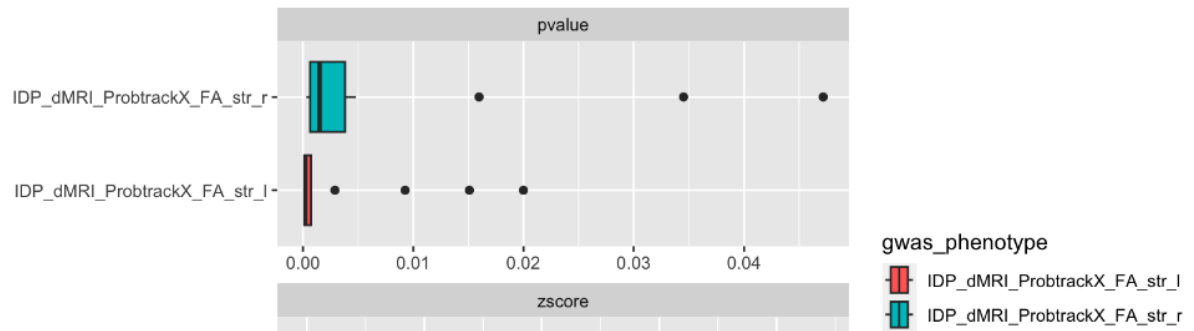


Figure S5. Enrichment analysis of cNIDPs from gene-based NeuroimaGene analysis. The light blue histogram is a null distribution reflecting how many PD cNIDPs were tagged by neuroimaging transcriptomics of 1000 random sets of genes. The red vertical line is the 95<sup>th</sup> percentile of the null distribution. The blue line represents the number of PD cNIDPs tagged by genes derived from the PD TWAS.

a.



b.

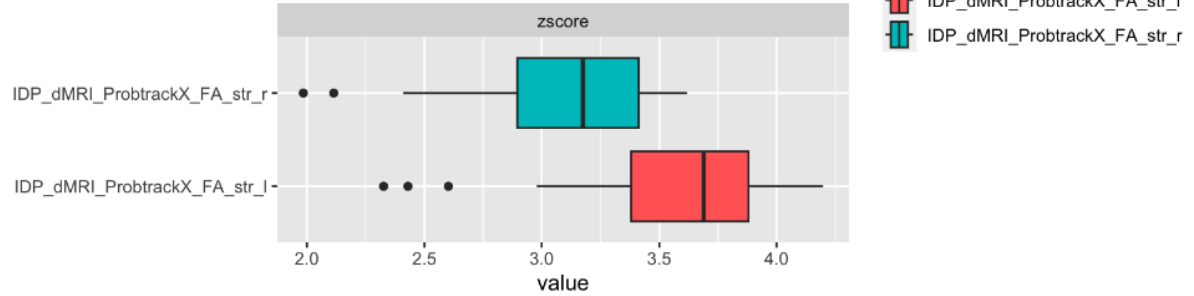


Figure S6. Association of the bilateral superior thalamic radiations with PD GReX.

a. The median pvalue for the significance of the association between PD GReX measures and the right and left superior thalamic radiations. The thicker midline bar represents the median while the box represents the inter-quartile range (IQR). Outliers beyond  $IQR \pm 1.5 \cdot IQR$  are shown as points.

b. The median normalized effect size of associations between PD GReX measures and the right and left superior thalamic radiations. The thicker midline bar represents the median while the box represents the inter-quartile range (IQR). Outliers beyond  $IQR \pm 1.5 \cdot IQR$  are shown as points.

Supplemental Table 1: Parkinson's Disease JTI TWAS findings by JTI model with model statistics

| training_model       | N_pd_assocs | N_genes | short_name         | type      | GTEx tissue samples per model | normalised associations per model |
|----------------------|-------------|---------|--------------------|-----------|-------------------------------|-----------------------------------|
| JTI_Adrenal_Gland    | 11          | 10458   | Adrenal_Gland      | Non-Brain | 233                           | 0.0472103                         |
| JTI_Brain_Amygdala   | 7           | 6523    | Amygdala           | Brain     | 129                           | 0.05426357                        |
| JTI_Brain_Anterior_c | 13          | 7704    | Ant_cing_cortex_BA | Brain     | 147                           | 0.088435374                       |
| JTI_Brain_Caudate_l  | 13          | 10087   | Caudate_BG         | Brain     | 194                           | 0.067010309                       |
| JTI_Brain_Cerebella  | 14          | 10794   | Cerebellar_Hemi    | Brain     | 175                           | 0.08                              |
| JTI_Brain_Cerebellu  | 15          | 11774   | Cerebellum         | Brain     | 209                           | 0.071770335                       |
| JTI_Brain_Cortex     | 13          | 10471   | Cortex             | Brain     | 205                           | 0.063414634                       |
| JTI_Brain_Frontal_Co | 11          | 9262    | Frontal_Cortex     | Brain     | 175                           | 0.062857143                       |
| JTI_Brain_Hippocarr  | 10          | 8140    | Hippocampus        | Brain     | 165                           | 0.060606061                       |
| JTI_Brain_Hypothala  | 6           | 8627    | Hypothalamus       | Brain     | 170                           | 0.035294118                       |
| JTI_Brain_Nucleus_a  | 10          | 10022   | Nucleus_acc_BG     | Brain     | 202                           | 0.04950495                        |
| JTI_Brain_Putamen_   | 13          | 9062    | Putamen_BG         | Brain     | 170                           | 0.076470588                       |
| JTI_Brain_Spinal_co  | 8           | 7841    | C1_Spinal_cord     | Brain     | 126                           | 0.063492063                       |
| JTI_Brain_Substantia | 9           | 6593    | Substantia_nigra   | Brain     | 114                           | 0.078947368                       |
| JTI_Colon_Sigmoid    | 14          | 12333   | Colon_Sigmoid      | Non-Brain | 318                           | 0.044025157                       |
| JTI_Colon_Transvers  | 13          | 12796   | Colon_Transverse   | Non-Brain | 368                           | 0.035326087                       |
| JTI_Liver            | 4           | 8252    | Liver              | Non-Brain | 208                           | 0.019230769                       |
| JTI_Pituitary        | 14          | 11193   | Pituitary          | Non-Brain | 237                           | 0.05907173                        |
| JTI_Whole_Blood      | 13          | 10315   | Whole_Blood        | Non-Brain | 670                           | 0.019402985                       |



Supplemental Table 2: NeuorimaGene associations between fractional anisotropy measures and iPD genes

| gene            | gene_name   | gwas_phenotype               | training_model                            | zscore      | Benjamini-Hochberg corrected<br>pvalue (FDR) |
|-----------------|-------------|------------------------------|-------------------------------------------|-------------|----------------------------------------------|
| ENSG00000118804 | STBD1       | IDP_dMRI_ProbtrackX_FA_str_l | JTI_Brain_Amygdala                        | 3.885868605 | 0.037279902                                  |
| ENSG00000138722 | MMRN1       | IDP_dMRI_ProbtrackX_FA_ml_l  | JTI_Brain_Caudate_basal_ganglia           | 4.008608299 | 0.027235431                                  |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_unc_r | JTI_Brain_Caudate_basal_ganglia           | 4.201847553 | 0.015851953                                  |
| ENSG00000149656 | LINC00266-1 | IDP_dMRI_ProbtrackX_FA_fma   | JTI_Brain_Cerebellar_Hemisphere           | 4.638884697 | 0.003808027                                  |
| ENSG00000149656 | LINC00266-1 | IDP_dMRI_ProbtrackX_FA_ifo_l | JTI_Brain_Cerebellar_Hemisphere           | 3.807913065 | 0.045116813                                  |
| ENSG00000226746 | SMCR5       | IDP_dMRI_ProbtrackX_FA_slf_l | JTI_Brain_Cerebellar_Hemisphere           | 4.162516069 | 0.017791586                                  |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_slf_r | JTI_Brain_Cerebellar_Hemisphere           | 3.946642849 | 0.03207618                                   |
| ENSG00000118804 | STBD1       | IDP_dMRI_ProbtrackX_FA_slf_r | JTI_Brain_Cerebellar_Hemisphere           | 3.824937026 | 0.043275173                                  |
| ENSG00000118804 | STBD1       | IDP_dMRI_ProbtrackX_FA_str_l | JTI_Brain_Cerebellar_Hemisphere           | 4.198141143 | 0.01601368                                   |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_unc_r | JTI_Brain_Cerebellar_Hemisphere           | 4.750415299 | 0.002535734                                  |
| ENSG00000226746 | SMCR5       | IDP_dMRI_ProbtrackX_FA_slf_l | JTI_Brain_Cerebellum                      | 4.233405583 | 0.014438273                                  |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_slf_r | JTI_Brain_Cerebellum                      | 4.032065229 | 0.025589376                                  |
| ENSG00000118804 | STBD1       | IDP_dMRI_ProbtrackX_FA_str_l | JTI_Brain_Cerebellum                      | 3.952528055 | 0.031606824                                  |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_unc_r | JTI_Brain_Cerebellum                      | 4.651362312 | 0.003644434                                  |
| ENSG00000226746 | SMCR5       | IDP_dMRI_ProbtrackX_FA_unc_r | JTI_Brain_Cerebellum                      | 3.937422486 | 0.032823584                                  |
| ENSG00000138722 | MMRN1       | IDP_dMRI_ProbtrackX_FA_ml_l  | JTI_Brain_Cortex                          | 4.049216105 | 0.024443406                                  |
| ENSG00000138722 | MMRN1       | IDP_dMRI_ProbtrackX_FA_ml_l  | JTI_Brain_Frontal_Cortex_BA9              | 3.987069119 | 0.02887534                                   |
| ENSG00000118804 | STBD1       | IDP_dMRI_ProbtrackX_FA_str_l | JTI_Brain_Hypothalamus                    | 3.880451373 | 0.037807578                                  |
| ENSG00000138722 | MMRN1       | IDP_dMRI_ProbtrackX_FA_ml_l  | JTI_Brain_Nucleus_accumbens_basal_ganglia | 3.842701902 | 0.04152896                                   |
| ENSG00000138722 | MMRN1       | IDP_dMRI_ProbtrackX_FA_ml_l  | JTI_Brain_Putamen_basal_ganglia           | 3.967850661 | 0.030351393                                  |
| ENSG00000138722 | MMRN1       | IDP_dMRI_ProbtrackX_FA_ml_l  | JTI_Brain_Spinal_cord_cervical_c-1        | 3.983801978 | 0.029111984                                  |
| ENSG00000118804 | STBD1       | IDP_dMRI_ProbtrackX_FA_str_l | JTI_Brain_Spinal_cord_cervical_c-1        | 3.838113962 | 0.04199635                                   |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_unc_r | JTI_Brain_Spinal_cord_cervical_c-1        | 4.430694426 | 0.007762832                                  |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_slf_r | JTI_Brain_Substantia_nigra                | 3.907995297 | 0.035329295                                  |
| ENSG00000118804 | STBD1       | IDP_dMRI_ProbtrackX_FA_str_l | JTI_Brain_Substantia_nigra                | 3.892196343 | 0.036730231                                  |
| ENSG00000169242 | EFNA1       | IDP_dMRI_ProbtrackX_FA_unc_r | JTI_Brain_Substantia_nigra                | 4.654560162 | 0.003607357                                  |
| ENSG00000138722 | MMRN1       | IDP_dMRI_ProbtrackX_FA_ml_l  | JTI_Liver                                 | 3.789343852 | 0.047174031                                  |

Supplemental Table 3: NeuorimaGene associations between Desikan cortical measures and iPD genes

| gene             | gene_name | gwas_phenotype                 | training_model                   | zscore       | Hochberg corrected<br>pvalue (FDR) |
|------------------|-----------|--------------------------------|----------------------------------|--------------|------------------------------------|
| ENSG00000011295  | TTC19     | aparc-Desikan_lh_area_paracen  | JTI_Adrenal_Gland                | -4.185184744 | 0.036832651                        |
| ENSG00000011295  | TTC19     | aparc-Desikan_lh_area_rostralm | JTI_Adrenal_Gland                | -4.136844667 | 0.041185887                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_lh_thickness_bai | JTI_Adrenal_Gland                | 4.304002692  | 0.027170546                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_lh_thickness_Glc | JTI_Adrenal_Gland                | 4.128170479  | 0.042004204                        |
| ENSG000000149922 | TBX6      | aparc-Desikan_lh_volume_inferi | JTI_Adrenal_Gland                | -4.487641813 | 0.016316919                        |
| ENSG000000149922 | TBX6      | aparc-Desikan_rh_area_middlet  | JTI_Adrenal_Gland                | -4.088795688 | 0.046066567                        |
| ENSG000000145214 | DGKQ      | aparc-Desikan_rh_area_TotalSui | JTI_Adrenal_Gland                | 4.089858548  | 0.045920524                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_cai | JTI_Adrenal_Gland                | 4.247325872  | 0.031395103                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_fus | JTI_Adrenal_Gland                | 4.337382536  | 0.024873711                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_Glc | JTI_Adrenal_Gland                | 5.402962702  | 0.000679194                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_inf | JTI_Adrenal_Gland                | 4.307097055  | 0.026954493                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_ins | JTI_Adrenal_Gland                | 4.314056366  | 0.026479908                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_lat | JTI_Adrenal_Gland                | 4.230832996  | 0.032742654                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_me  | JTI_Adrenal_Gland                | 4.621584533  | 0.011082127                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_pai | JTI_Adrenal_Gland                | 4.405037629  | 0.020606684                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_pai | JTI_Adrenal_Gland                | 4.560718034  | 0.013207993                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_ros | JTI_Adrenal_Gland                | 4.209305196  | 0.034576786                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_suj | JTI_Adrenal_Gland                | 4.251843269  | 0.030977875                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_suj | JTI_Adrenal_Gland                | 4.266556857  | 0.029880325                        |
| ENSG000000169612 | RAMAC     | aparc-Desikan_rh_thickness_suj | JTI_Adrenal_Gland                | 5.004438704  | 0.003046677                        |
| ENSG000000214941 | ZSWIM7    | aparc-Desikan_lh_area_paracen  | JTI_Brain_Amygdala               | 4.305196961  | 0.027088538                        |
| ENSG00000011295  | TTC19     | aparc-Desikan_lh_area_paracen  | JTI_Brain_Amygdala               | -4.164969143 | 0.038626681                        |
| ENSG000000196993 | NPIPB9    | aparc-Desikan_lh_area_pericalc | JTI_Brain_Amygdala               | -4.151660475 | 0.039847195                        |
| ENSG00000011295  | TTC19     | aparc-Desikan_lh_area_rostralm | JTI_Brain_Amygdala               | -4.099930513 | 0.044739254                        |
| ENSG000000136235 | GPNMB     | aparc-Desikan_lh_area_TotalSur | JTI_Brain_Amygdala               | -4.110415913 | 0.043660755                        |
| ENSG000000149922 | TBX6      | aparc-Desikan_lh_volume_inferi | JTI_Brain_Amygdala               | -4.809514962 | 0.005942747                        |
| ENSG000000197361 | FBXL22    | aparc-Desikan_lh_volume_medi   | JTI_Brain_Amygdala               | -4.224729804 | 0.033264847                        |
| ENSG000000149922 | TBX6      | aparc-Desikan_rh_area_middlet  | JTI_Brain_Amygdala               | -4.186071175 | 0.0367531                          |
| ENSG000000196993 | NPIPB9    | aparc-Desikan_rh_area_pericalc | JTI_Brain_Amygdala               | -4.153196618 | 0.039710719                        |
| ENSG000000136235 | GPNMB     | aparc-Desikan_rh_area_TotalSui | JTI_Brain_Amygdala               | -4.151829915 | 0.039831091                        |
| ENSG000000214941 | ZSWIM7    | aparc-Desikan_lh_area_paracen  | JTI_Brain_Anterior_cingulate_cor | 4.392919925  | 0.021323274                        |
| ENSG000000136235 | GPNMB     | aparc-Desikan_lh_area_TotalSur | JTI_Brain_Anterior_cingulate_cor | -4.127262399 | 0.042106057                        |
| ENSG000000149922 | TBX6      | aparc-Desikan_lh_volume_inferi | JTI_Brain_Anterior_cingulate_cor | -4.543158598 | 0.013947802                        |
| ENSG000000149922 | TBX6      | aparc-Desikan_rh_area_middlet  | JTI_Brain_Anterior_cingulate_cor | -4.131828307 | 0.041630219                        |
| ENSG000000136235 | GPNMB     | aparc-Desikan_rh_area_TotalSui | JTI_Brain_Anterior_cingulate_cor | -4.166887917 | 0.0384642                          |

|                 |            |                                                                |              |             |
|-----------------|------------|----------------------------------------------------------------|--------------|-------------|
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Caudate_basal_gangli   | 4.132819949  | 0.041580797 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_lh_area_TotalSur JTI_Brain_Caudate_basal_gangli  | -4.134648106 | 0.041392798 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Caudate_basal_gangli  | -4.421345268 | 0.01969334  |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_area_lateral JTI_Brain_Caudate_basal_gangli   | -4.08557415  | 0.046401541 |
| ENSG00000149922 | TBX6       | aparc-Desikan_rh_area_middlet JTI_Brain_Caudate_basal_gangli   | -4.086330863 | 0.046319837 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_rh_area_TotalSui JTI_Brain_Caudate_basal_gangli  | -4.175556272 | 0.03764873  |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_thickness_istl JTI_Brain_Caudate_basal_gangli | -4.058847904 | 0.04949875  |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Cerebellar_Hemispher   | -4.272728679 | 0.029414185 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_lh_area_paracen JTI_Brain_Cerebellar_Hemispher   | -4.11314629  | 0.04337058  |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_lh_area_TotalSur JTI_Brain_Cerebellar_Hemispher  | -4.129616462 | 0.041841002 |
| ENSG00000226816 | AC005082.1 | aparc-Desikan_lh_area_TotalSur JTI_Brain_Cerebellar_Hemispher  | 4.074138865  | 0.047755087 |
| ENSG00000117280 | RAB29      | aparc-Desikan_lh_volume_lingu JTI_Brain_Cerebellar_Hemispher   | 4.077278262  | 0.047381164 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_area_lateral JTI_Brain_Cerebellar_Hemispher   | -4.428159136 | 0.019360246 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_rh_area_TotalSui JTI_Brain_Cerebellar_Hemispher  | -4.171176973 | 0.038060846 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_thickness_istl JTI_Brain_Cerebellar_Hemispher | -4.395760265 | 0.021165156 |
| ENSG00000226746 | SMCR5      | aparc-Desikan_rh_volume_bank JTI_Brain_Cerebellar_Hemispher    | 4.212214845  | 0.034321767 |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Cerebellum             | -4.318261855 | 0.026189823 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_lh_area_TotalSur JTI_Brain_Cerebellum            | -4.130570193 | 0.041743123 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_area_lateral JTI_Brain_Cerebellum             | -4.149931772 | 0.040014779 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_rh_area_TotalSui JTI_Brain_Cerebellum            | -4.169789738 | 0.038206378 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_thickness_istl JTI_Brain_Cerebellum           | -4.341332202 | 0.024595931 |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Cortex                 | 4.341813999  | 0.024571936 |
| ENSG00000011295 | TTC19      | aparc-Desikan_lh_area_paracen JTI_Brain_Cortex                 | -4.332744716 | 0.025170854 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_lh_area_TotalSur JTI_Brain_Cortex                | -4.134687041 | 0.041392531 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Cortex                | -4.422273221 | 0.019636377 |
| ENSG00000149922 | TBX6       | aparc-Desikan_rh_area_middlet JTI_Brain_Cortex                 | -4.086438229 | 0.046319837 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_rh_area_TotalSui JTI_Brain_Cortex                | -4.175525569 | 0.037650488 |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Frontal_Cortex_BA9     | 4.411866176  | 0.020219595 |
| ENSG00000258413 | AL158801.2 | aparc-Desikan_lh_area_precune JTI_Brain_Frontal_Cortex_BA9     | 4.535382368  | 0.014291402 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_lh_area_TotalSur JTI_Brain_Frontal_Cortex_BA9    | -4.134900794 | 0.041377473 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Frontal_Cortex_BA9    | -4.473048165 | 0.017026842 |
| ENSG00000258413 | AL158801.2 | aparc-Desikan_lh_volume_prec JTI_Brain_Frontal_Cortex_BA9      | 4.857234786  | 0.005038328 |
| ENSG00000149922 | TBX6       | aparc-Desikan_rh_area_middlet JTI_Brain_Frontal_Cortex_BA9     | -4.105198875 | 0.044137626 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_rh_area_TotalSui JTI_Brain_Frontal_Cortex_BA9    | -4.176496139 | 0.037583072 |
| ENSG00000258413 | AL158801.2 | aparc-Desikan_rh_area_transver JTI_Brain_Frontal_Cortex_BA9    | 4.344719984  | 0.024364468 |
| ENSG00000011295 | TTC19      | aparc-Desikan_lh_area_paracen JTI_Brain_Hippocampus            | -4.399273229 | 0.020962591 |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Hippocampus            | 4.322247662  | 0.025899725 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_lh_area_TotalSur JTI_Brain_Hippocampus           | -4.126670559 | 0.042164715 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Hippocampus           | -4.191158244 | 0.036203868 |
| ENSG00000136235 | GPNUMB     | aparc-Desikan_rh_area_TotalSui JTI_Brain_Hippocampus           | -4.166366377 | 0.038512175 |

|                 |            |                                                                  |              |             |
|-----------------|------------|------------------------------------------------------------------|--------------|-------------|
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Hypothalamus             | 4.418655867  | 0.019867582 |
| ENSG00000258413 | AL158801.2 | aparc-Desikan_lh_area_precune JTI_Brain_Hypothalamus             | 4.538608879  | 0.014167678 |
| ENSG00000136235 | GPNMB      | aparc-Desikan_lh_area_TotalSur JTI_Brain_Hypothalamus            | -4.129406821 | 0.04186348  |
| ENSG00000109180 | OCIAD1     | aparc-Desikan_lh_thickness_istl JTI_Brain_Hypothalamus           | 4.447078364  | 0.018397742 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Hypothalamus            | -4.65859851  | 0.009854829 |
| ENSG00000117280 | RAB29      | aparc-Desikan_lh_volume_lingu JTI_Brain_Hypothalamus             | 4.09558753   | 0.045202583 |
| ENSG00000109180 | OCIAD1     | aparc-Desikan_lh_volume_parac JTI_Brain_Hypothalamus             | 4.445778287  | 0.018459859 |
| ENSG00000258413 | AL158801.2 | aparc-Desikan_lh_volume_prec JTI_Brain_Hypothalamus              | 4.863155251  | 0.004940846 |
| ENSG00000149922 | TBX6       | aparc-Desikan_rh_area_middlet JTI_Brain_Hypothalamus             | -4.219045906 | 0.033697558 |
| ENSG00000136235 | GPNMB      | aparc-Desikan_rh_area_TotalSui JTI_Brain_Hypothalamus            | -4.168771788 | 0.03830035  |
| ENSG00000258413 | AL158801.2 | aparc-Desikan_rh_area_transver JTI_Brain_Hypothalamus            | 4.340327944  | 0.02467082  |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Nucleus_accumbens_       | 4.145708009  | 0.040384103 |
| ENSG00000226816 | AC005082.1 | aparc-Desikan_lh_area_TotalSur JTI_Brain_Nucleus_accumbens_      | 4.35627342   | 0.023563976 |
| ENSG00000136235 | GPNMB      | aparc-Desikan_lh_area_TotalSur JTI_Brain_Nucleus_accumbens_      | -4.132703414 | 0.041588921 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Nucleus_accumbens_      | -4.213616504 | 0.034213348 |
| ENSG00000136235 | GPNMB      | aparc-Desikan_rh_area_TotalSui JTI_Brain_Nucleus_accumbens_      | -4.176649077 | 0.03757217  |
| ENSG00000226816 | AC005082.1 | aparc-Desikan_rh_area_TotalSui JTI_Brain_Nucleus_accumbens_      | 4.094032272  | 0.045383637 |
| ENSG00000117280 | RAB29      | aparc-Desikan_lh_area_lingual JTI_Brain_Putamen_basal_gangli     | 4.204415928  | 0.035038554 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_lh_area_paracen JTI_Brain_Putamen_basal_gangli     | -4.467417849 | 0.017334453 |
| ENSG00000011295 | TTC19      | aparc-Desikan_lh_area_paracen JTI_Brain_Putamen_basal_gangli     | -4.308360562 | 0.026871898 |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Putamen_basal_gangli     | 4.086817808  | 0.046276033 |
| ENSG00000226816 | AC005082.1 | aparc-Desikan_lh_area_TotalSur JTI_Brain_Putamen_basal_gangli    | 4.130830931  | 0.041724836 |
| ENSG00000136235 | GPNMB      | aparc-Desikan_lh_area_TotalSur JTI_Brain_Putamen_basal_gangli    | -4.120540952 | 0.042665238 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Putamen_basal_gangli    | -4.325660577 | 0.025660725 |
| ENSG00000117280 | RAB29      | aparc-Desikan_lh_volume_lingu JTI_Brain_Putamen_basal_gangli     | 4.817343105  | 0.005780989 |
| ENSG00000149922 | TBX6       | aparc-Desikan_rh_area_middlet JTI_Brain_Putamen_basal_gangli     | -4.101750519 | 0.04454318  |
| ENSG00000136235 | GPNMB      | aparc-Desikan_rh_area_TotalSui JTI_Brain_Putamen_basal_gangli    | -4.160928752 | 0.039001498 |
| ENSG00000117280 | RAB29      | aparc-Desikan_rh_volume_peric JTI_Brain_Putamen_basal_gangli     | 4.214102267  | 0.034178684 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_area_banksst JTI_Brain_Spinal_cord_cervical_c   | -4.326908979 | 0.025595943 |
| ENSG00000011295 | TTC19      | aparc-Desikan_lh_area_paracen JTI_Brain_Spinal_cord_cervical_c   | -4.174178055 | 0.037777395 |
| ENSG00000011295 | TTC19      | aparc-Desikan_lh_area_rostralm JTI_Brain_Spinal_cord_cervical_c  | -4.110094955 | 0.043697557 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_volume_inferi JTI_Brain_Spinal_cord_cervical_c  | -4.745933452 | 0.007352297 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_area_lateral JTI_Brain_Spinal_cord_cervical_c   | -4.206953821 | 0.03480192  |
| ENSG00000149922 | TBX6       | aparc-Desikan_rh_area_middlet JTI_Brain_Spinal_cord_cervical_c   | -4.406782721 | 0.020520577 |
| ENSG00000169242 | EFNA1      | aparc-Desikan_rh_thickness_istl JTI_Brain_Spinal_cord_cervical_c | -4.192475186 | 0.036102806 |
| ENSG00000100994 | PYGB       | aparc-Desikan_rh_volume_later JTI_Brain_Spinal_cord_cervical_c   | -4.315938519 | 0.026352263 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_area_banksst JTI_Brain_Substantia_nigra         | -4.413740038 | 0.020139354 |
| ENSG00000149922 | TBX6       | aparc-Desikan_lh_area_inferiort JTI_Brain_Substantia_nigra       | -4.066085458 | 0.048690653 |
| ENSG00000214941 | ZSWIM7     | aparc-Desikan_lh_area_paracen JTI_Brain_Substantia_nigra         | 4.378983063  | 0.02214052  |
| ENSG00000196993 | NPIPB9     | aparc-Desikan_lh_area_pericalc JTI_Brain_Substantia_nigra        | -4.433023544 | 0.019082683 |

|                 |        |                                                            |              |             |
|-----------------|--------|------------------------------------------------------------|--------------|-------------|
| ENSG00000136235 | GPNMB  | aparc-Desikan_lh_area_TotalSui JTI_Brain_Substantia_nigra  | -4.100275667 | 0.044713081 |
| ENSG00000149922 | TBX6   | aparc-Desikan_lh_volume_inferi JTI_Brain_Substantia_nigra  | -5.056445261 | 0.002546404 |
| ENSG00000117280 | RAB29  | aparc-Desikan_lh_volume_lingu JTI_Brain_Substantia_nigra   | 4.133709941  | 0.041493656 |
| ENSG00000169242 | EFNA1  | aparc-Desikan_rh_area_lateral JTI_Brain_Substantia_nigra   | -4.358185684 | 0.023439946 |
| ENSG00000149922 | TBX6   | aparc-Desikan_rh_area_middlet JTI_Brain_Substantia_nigra   | -4.089205411 | 0.046009104 |
| ENSG00000196993 | NPIPB9 | aparc-Desikan_rh_area_pericalc JTI_Brain_Substantia_nigra  | -4.337954073 | 0.024836067 |
| ENSG00000136235 | GPNMB  | aparc-Desikan_rh_area_TotalSui JTI_Brain_Substantia_nigra  | -4.142608095 | 0.040682299 |
| ENSG00000169242 | EFNA1  | aparc-Desikan_rh_thickness_istl JTI_Brain_Substantia_nigra | -4.30123342  | 0.027330515 |
| ENSG00000149922 | TBX6   | aparc-Desikan_rh_volume_lingu JTI_Brain_Substantia_nigra   | -4.631463643 | 0.010745107 |
| ENSG00000109180 | OCIAD1 | aparc-Desikan_lh_area_lateral JTI_Colon_Sigmoid            | -4.110526179 | 0.0436529   |
| ENSG00000196993 | NPIPB9 | aparc-Desikan_lh_area_pericalc JTI_Colon_Sigmoid           | -4.371860118 | 0.022540325 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_lh_thickness_bai JTI_Colon_Sigmoid           | 4.313710732  | 0.026515261 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_lh_thickness_Glc JTI_Colon_Sigmoid           | 4.14485036   | 0.040468361 |
| ENSG00000149922 | TBX6   | aparc-Desikan_lh_volume_inferi JTI_Colon_Sigmoid           | -4.131774804 | 0.041630219 |
| ENSG00000196993 | NPIPB9 | aparc-Desikan_rh_area_pericalc JTI_Colon_Sigmoid           | -4.253585567 | 0.030839647 |
| ENSG00000145214 | DGKQ   | aparc-Desikan_rh_area_TotalSui JTI_Colon_Sigmoid           | 4.132688561  | 0.041588921 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_cai JTI_Colon_Sigmoid           | 4.244227913  | 0.031662365 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_fus JTI_Colon_Sigmoid           | 4.354426238  | 0.023692632 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_Glc JTI_Colon_Sigmoid           | 5.422463336  | 0.000622106 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_inf JTI_Colon_Sigmoid           | 4.348684593  | 0.024047665 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_ins JTI_Colon_Sigmoid           | 4.296297802  | 0.027679155 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_lat JTI_Colon_Sigmoid           | 4.212191419  | 0.034321767 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_me JTI_Colon_Sigmoid            | 4.593142523  | 0.012009945 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_pai JTI_Colon_Sigmoid           | 4.357742927  | 0.02346469  |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_pai JTI_Colon_Sigmoid           | 4.533996009  | 0.014358244 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_ros JTI_Colon_Sigmoid           | 4.223541495  | 0.033348068 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_suj JTI_Colon_Sigmoid           | 4.322094544  | 0.025905962 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_suj JTI_Colon_Sigmoid           | 4.276011076  | 0.029179178 |
| ENSG00000169612 | RAMAC  | aparc-Desikan_rh_thickness_suj JTI_Colon_Sigmoid           | 5.05301336   | 0.002576137 |
| ENSG00000196993 | NPIPB9 | aparc-Desikan_lh_area_pericalc JTI_Colon_Transverse        | -4.410322356 | 0.020327531 |
| ENSG00000149922 | TBX6   | aparc-Desikan_lh_volume_inferi JTI_Colon_Transverse        | -4.146386656 | 0.040334264 |
| ENSG00000109180 | OCIAD1 | aparc-Desikan_lh_volume_parac JTI_Colon_Transverse         | 4.119422946  | 0.042738805 |
| ENSG00000196993 | NPIPB9 | aparc-Desikan_rh_area_pericalc JTI_Colon_Transverse        | -4.304593843 | 0.027134826 |
| ENSG00000145214 | DGKQ   | aparc-Desikan_rh_area_TotalSui JTI_Liver                   | 4.114568874  | 0.043237808 |
| ENSG00000214941 | ZSWIM7 | aparc-Desikan_lh_area_paracen JTI_Pituitary                | -4.088710008 | 0.046076766 |
| ENSG00000011295 | TTC19  | aparc-Desikan_rh_thickness_me JTI_Pituitary                | 4.09501584   | 0.045275772 |

Supplemental Table 4: Fine mapping details for eQTLs

|                 |                        |             |           |             |             |             |                                      | p4: both traits are associated and share a single causal variant |
|-----------------|------------------------|-------------|-----------|-------------|-------------|-------------|--------------------------------------|------------------------------------------------------------------|
| gene            | SNP                    | log10p_gwas | gwas_beta | log10p_eqtl | eqtl_beta   | pval_score  | training_model                       | p4                                                               |
| ENSG00000238083 | chr17_46723974_C_T_b38 | 20.32066297 | 0.2168    | 25.19939551 | 1.0840714   | 45.52005848 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46723580_C_T_b38 | 20.20176382 | 0.2159    | 25.19939551 | 1.0840714   | 45.40115933 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46717868_A_G_b38 | 20.09810597 | 0.2153    | 25.19939551 | 1.0840714   | 45.29750147 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46740910_T_C_b38 | 20.08586849 | 0.2155    | 25.19939551 | 1.0840714   | 45.28526399 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46714277_G_A_b38 | 20.06018134 | 0.2151    | 25.19939551 | 1.0840714   | 45.25957684 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46710944_G_A_b38 | 20.04643359 | 0.2151    | 25.19939551 | 1.0840714   | 45.24582909 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46711919_A_G_b38 | 20.0099721  | 0.2148    | 25.19939551 | 1.0840714   | 45.20936761 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46731536_G_A_b38 | 19.92226882 | 0.2144    | 25.19939551 | 1.0840714   | 45.12166433 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46742756_G_A_b38 | 19.84588047 | 0.2142    | 25.19939551 | 1.0840714   | 45.04527598 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000238083 | chr17_46708970_T_A_b38 | 19.49133564 | 0.2135    | 25.19939551 | 1.0840714   | 44.69073114 | Brain_Amygdala                       | 0.515140294                                                      |
| ENSG00000247775 | chr4_89716450_G_A_b38  | 40.4597957  | 0.2334    | 4.329307419 | -0.43277916 | 44.78910312 | Brain_Anterior_cingulate_cortex_BA24 | 0.705612649                                                      |
| ENSG00000247775 | chr4_89744890_C_T_b38  | 40.52186657 | 0.2398    | 4.099057403 | -0.41601843 | 44.62092398 | Brain_Anterior_cingulate_cortex_BA24 | 0.705612649                                                      |
| ENSG00000247775 | chr4_89744890_C_T_b38  | 40.52186657 | 0.2398    | 3.440479837 | -0.40366235 | 43.96234641 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89716450_G_A_b38  | 40.4597957  | 0.2334    | 3.166037701 | -0.39187917 | 43.6258334  | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89715410_G_A_b38  | 35.99567863 | 0.2197    | 4.403627608 | -0.42396212 | 40.39930623 | Brain_Anterior_cingulate_cortex_BA24 | 0.705612649                                                      |
| ENSG00000247775 | chr4_89715410_G_A_b38  | 35.99567863 | 0.2197    | 2.982545091 | -0.36735675 | 38.97822372 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89704960_G_A_b38  | 33.02645653 | 0.2545    | 4.985713208 | -0.49181455 | 38.01216974 | Brain_Anterior_cingulate_cortex_BA24 | 0.705612649                                                      |
| ENSG00000247775 | chr4_89704960_G_A_b38  | 33.02645653 | 0.2545    | 3.677736625 | -0.44721377 | 36.70419316 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89722606_C_G_b38  | 31.59963473 | 0.2043    | 2.984099805 | -0.36028397 | 34.58373453 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89721313_A_T_b38  | 31.59825492 | 0.2041    | 2.984099805 | -0.36028397 | 34.58235472 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89742391_T_C_b38  | 31.54272381 | 0.2085    | 2.984099805 | -0.36028397 | 34.52682362 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89750185_G_A_b38  | 31.36774522 | 0.2093    | 2.984099805 | -0.36028397 | 34.35184503 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89747463_T_C_b38  | 31.25080496 | 0.2084    | 2.984099805 | -0.36028397 | 34.23490476 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000247775 | chr4_89753280_G_A_b38  | 31.07510074 | 0.2089    | 2.984099805 | -0.36028397 | 34.05920054 | Brain_Hippocampus                    | 0.719659909                                                      |
| ENSG00000138722 | chr4_89744890_C_T_b38  | 40.52186657 | 0.2398    | 3.575681919 | -0.35483712 | 44.09754849 | Brain_Anterior_cingulate_cortex_BA24 | 0.655423985                                                      |
| ENSG00000138722 | chr4_89716450_G_A_b38  | 40.4597957  | 0.2334    | 3.539481938 | -0.35659063 | 43.99927764 | Brain_Anterior_cingulate_cortex_BA24 | 0.655423985                                                      |
| ENSG00000138722 | chr4_89744890_C_T_b38  | 40.52186657 | 0.2398    | 3.005936214 | -0.33742416 | 43.52780279 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89716450_G_A_b38  | 40.4597957  | 0.2334    | 3.005936214 | -0.33742416 | 43.46573191 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89715410_G_A_b38  | 35.99567863 | 0.2197    | 3.274413264 | -0.3468558  | 39.27009189 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89715410_G_A_b38  | 35.99567863 | 0.2197    | 3.162293135 | -0.32532805 | 39.15797176 | Brain_Anterior_cingulate_cortex_BA24 | 0.655423985                                                      |
| ENSG00000138722 | chr4_89704960_G_A_b38  | 33.02645653 | 0.2545    | 3.786241493 | -0.39051035 | 36.81269802 | Brain_Anterior_cingulate_cortex_BA24 | 0.655423985                                                      |
| ENSG00000138722 | chr4_89722606_C_G_b38  | 31.59963473 | 0.2043    | 4.737532017 | -0.4015356  | 36.33716674 | Brain_Anterior_cingulate_cortex_BA24 | 0.655423985                                                      |
| ENSG00000138722 | chr4_89721313_A_T_b38  | 31.59825492 | 0.2041    | 4.737532017 | -0.4015356  | 36.33578693 | Brain_Anterior_cingulate_cortex_BA24 | 0.655423985                                                      |
| ENSG00000138722 | chr4_89704960_G_A_b38  | 33.02645653 | 0.2545    | 2.461766202 | -0.29258338 | 35.48822273 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89722606_C_G_b38  | 31.59963473 | 0.2043    | 3.092775341 | -0.33490485 | 34.69241007 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89721313_A_T_b38  | 31.59825492 | 0.2041    | 3.092775341 | -0.33490485 | 34.69103026 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89742391_T_C_b38  | 31.54272381 | 0.2085    | 3.092775341 | -0.33490485 | 34.63549915 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89750185_G_A_b38  | 31.36774522 | 0.2093    | 3.092775341 | -0.33490485 | 34.46052056 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89747463_T_C_b38  | 31.25080496 | 0.2084    | 3.092775341 | -0.33490485 | 34.3435803  | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000138722 | chr4_89753280_G_A_b38  | 31.07510074 | 0.2089    | 3.092775341 | -0.33490485 | 34.16787608 | Brain_Spinal_cord_cervical_c-1       | 0.581876828                                                      |
| ENSG00000136243 | chr7_23211386_T_C_b38  | 8.311580178 | 0.104     | 30.67151351 | -0.6409102  | 38.98309369 | Brain_Cerebellum                     | 0.967988188                                                      |
| ENSG00000136243 | chr7_23154986_A_G_b38  | 7.909741947 | -0.1007   | 30.06398327 | 0.64459366  | 37.97372522 | Brain_Cerebellum                     | 0.967988188                                                      |
| ENSG00000136243 | chr7_23205950_A_G_b38  | 8.416687848 | 0.1039    | 29.28258538 | -0.6391692  | 37.69927323 | Brain_Cerebellum                     | 0.967988188                                                      |

|                 |                        |             |         |             |             |             |                                       |             |
|-----------------|------------------------|-------------|---------|-------------|-------------|-------------|---------------------------------------|-------------|
| ENSG00000136243 | chr7_23208417_A_G_b38  | 8.352323687 | 0.1036  | 29.28258538 | -0.6391692  | 37.63490907 | Brain_Cerebellum                      | 0.967988188 |
| ENSG00000136243 | chr7_23205012_A_G_b38  | 8.346884007 | 0.1035  | 29.28258538 | -0.6391692  | 37.62946939 | Brain_Cerebellum                      | 0.967988188 |
| ENSG00000136243 | chr7_23208539_C_T_b38  | 8.335358024 | 0.1035  | 29.28258538 | -0.6391692  | 37.61794341 | Brain_Cerebellum                      | 0.967988188 |
| ENSG00000136243 | chr7_23193040_T_C_b38  | 8.263205245 | 0.1028  | 29.28258538 | -0.6391692  | 37.54579063 | Brain_Cerebellum                      | 0.967988188 |
| ENSG00000136243 | chr7_23203135_A_T_b38  | 8.23852322  | 0.1028  | 29.28258538 | -0.6391692  | 37.5211086  | Brain_Cerebellum                      | 0.967988188 |
| ENSG00000136243 | chr7_23157197_C_T_b38  | 7.477034405 | -0.098  | 30.02358788 | 0.65032315  | 37.50062228 | Brain_Cerebellum                      | 0.967988188 |
| ENSG00000136243 | chr7_23203211_C_G_b38  | 8.186018924 | 0.1025  | 29.28258538 | -0.6391692  | 37.46860431 | Brain_Cerebellum                      | 0.967988188 |
| ENSG00000136243 | chr7_23154394_C_T_b38  | 7.419759492 | -0.0973 | 25.87504612 | 0.7872046   | 33.29480562 | Brain_Cortex                          | 0.82413895  |
| ENSG00000136243 | chr7_23157197_C_T_b38  | 7.477034405 | -0.098  | 25.62113127 | 0.7813714   | 33.09816567 | Brain_Cortex                          | 0.82413895  |
| ENSG00000136243 | chr7_23205950_A_G_b38  | 8.416687848 | 0.1039  | 24.24273833 | -0.76885605 | 32.65942618 | Brain_Cortex                          | 0.82413895  |
| ENSG00000136243 | chr7_23154986_A_G_b38  | 7.909741947 | -0.1007 | 24.70852518 | 0.7770853   | 32.61826713 | Brain_Cortex                          | 0.82413895  |
| ENSG00000136243 | chr7_23208417_A_G_b38  | 8.352323687 | 0.1036  | 24.24273833 | -0.76885605 | 32.59506202 | Brain_Cortex                          | 0.82413895  |
| ENSG00000136243 | chr7_23351890_C_G_b38  | 8.160773426 | 0.1033  | 12.4207936  | -0.6978589  | 20.58156702 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23350848_G_C_b38  | 8.079720105 | 0.1027  | 12.49258379 | -0.7038312  | 20.5723039  | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23292784_G_T_b38  | 8.368454772 | 0.1037  | 11.51808701 | -0.67158145 | 19.88654178 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23292661_C_T_b38  | 7.545002783 | 0.0992  | 12.10115214 | -0.71017224 | 19.64615493 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23362336_G_T_b38  | 7.898252926 | 0.1018  | 11.66333369 | -0.67885727 | 19.56158662 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23244618_A_G_b38  | 8.100453069 | 0.1002  | 10.87997883 | -0.6943013  | 18.9804319  | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23255281_C_T_b38  | 7.95546024  | 0.0991  | 10.87997883 | -0.6943013  | 18.83543907 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23255049_T_C_b38  | 7.911863911 | 0.0987  | 10.87997883 | -0.6943013  | 18.79184275 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23246696_G_A_b38  | 7.907279355 | 0.0987  | 10.87997883 | -0.6943013  | 18.78725819 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000136243 | chr7_23238664_G_T_b38  | 7.862645889 | 0.0984  | 10.87997883 | -0.6943013  | 18.74262472 | Brain_Substantia_nigra                | 0.888186479 |
| ENSG00000214941 | chr17_16107606_A_G_b38 | 7.410720779 | 0.0957  | 27.75562212 | -0.68832296 | 35.1663429  | Brain_Cortex                          | 0.749470156 |
| ENSG00000214941 | chr17_16131911_A_T_b38 | 7.354184882 | 0.096   | 27.75562212 | -0.68832296 | 35.109807   | Brain_Cortex                          | 0.749470156 |
| ENSG00000214941 | chr17_16058679_T_A_b38 | 7.304781081 | 0.0937  | 27.07054008 | -0.6846012  | 34.37532116 | Brain_Cortex                          | 0.749470156 |
| ENSG00000214941 | chr17_16143531_A_T_b38 | 7.301029996 | 0.0958  | 26.78777593 | -0.67751783 | 34.08880593 | Brain_Cortex                          | 0.749470156 |
| ENSG00000214941 | chr17_16065359_G_A_b38 | 7.337431033 | 0.0941  | 26.36673821 | -0.67737967 | 33.70416925 | Brain_Cortex                          | 0.749470156 |
| ENSG00000214941 | chr17_16143531_A_T_b38 | 7.301029996 | 0.0958  | 17.5644678  | 0.6130851   | 24.8654978  | Brain_Cerebellar_Hemisphere           | 0.67957505  |
| ENSG00000214941 | chr17_16107606_A_G_b38 | 7.410720779 | 0.0957  | 16.88226126 | 0.6041358   | 24.29298204 | Brain_Cerebellar_Hemisphere           | 0.67957505  |
| ENSG00000214941 | chr17_16131911_A_T_b38 | 7.354184882 | 0.096   | 16.88226126 | 0.6041358   | 24.23644614 | Brain_Cerebellar_Hemisphere           | 0.67957505  |
| ENSG00000214941 | chr17_16058679_T_A_b38 | 7.304781081 | 0.0937  | 16.56734896 | 0.6013761   | 23.87213004 | Brain_Cerebellar_Hemisphere           | 0.67957505  |
| ENSG00000214941 | chr17_16065359_G_A_b38 | 7.337431033 | 0.0941  | 16.02234436 | 0.59024584  | 23.35977539 | Brain_Cerebellar_Hemisphere           | 0.67957505  |
| ENSG00000136235 | chr7_23244618_A_G_b38  | 8.100453069 | 0.1002  | 24.02538188 | -0.84544414 | 32.12583494 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23255281_C_T_b38  | 7.95546024  | 0.0991  | 24.02538188 | -0.84544414 | 31.98084211 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23255049_T_C_b38  | 7.911863911 | 0.0987  | 24.02538188 | -0.84544414 | 31.93724579 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23246696_G_A_b38  | 7.907279355 | 0.0987  | 24.02538188 | -0.84544414 | 31.93266123 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23238664_G_T_b38  | 7.862645889 | 0.0984  | 24.02538188 | -0.84544414 | 31.88802776 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23254127_A_G_b38  | 7.819300799 | 0.098   | 24.02538188 | -0.84544414 | 31.84468267 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23254525_T_C_b38  | 7.811071516 | 0.098   | 24.02538188 | -0.84544414 | 31.83645339 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23253479_C_A_b38  | 7.583858969 | 0.0969  | 24.05718616 | -0.8406155  | 31.64104513 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23248690_G_A_b38  | 7.571379327 | 0.097   | 24.05718616 | -0.8406155  | 31.62856548 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23256914_G_A_b38  | 7.55036735  | 0.0969  | 24.05718616 | -0.8406155  | 31.60755351 | Brain_Nucleus_accumbens_basal_ganglia | 0.925646117 |
| ENSG00000136235 | chr7_23244618_A_G_b38  | 8.100453069 | 0.1002  | 22.75383087 | -0.76135117 | 30.85428394 | Brain_Frontal_Cortex_BA9              | 0.919738662 |
| ENSG00000136235 | chr7_23255281_C_T_b38  | 7.95546024  | 0.0991  | 22.75383087 | -0.76135117 | 30.70929111 | Brain_Frontal_Cortex_BA9              | 0.919738662 |
| ENSG00000136235 | chr7_23255049_T_C_b38  | 7.911863911 | 0.0987  | 22.75383087 | -0.76135117 | 30.66569478 | Brain_Frontal_Cortex_BA9              | 0.919738662 |
| ENSG00000136235 | chr7_23246696_G_A_b38  | 7.907279355 | 0.0987  | 22.75383087 | -0.76135117 | 30.66111023 | Brain_Frontal_Cortex_BA9              | 0.919738662 |
| ENSG00000136235 | chr7_23292784_G_T_b38  | 8.368454772 | 0.1037  | 22.24869012 | -0.7365154  | 30.61714489 | Brain_Frontal_Cortex_BA9              | 0.919738662 |

|                 |                       |             |         |             |             |             |                             |             |
|-----------------|-----------------------|-------------|---------|-------------|-------------|-------------|-----------------------------|-------------|
| ENSG00000136235 | chr7_23238664_G_T_b38 | 7.862645889 | 0.0984  | 22.75383087 | -0.76135117 | 30.61647676 | Brain_Frontal_Cortex_BA9    | 0.919738662 |
| ENSG00000136235 | chr7_23254127_A_G_b38 | 7.819300799 | 0.098   | 22.75383087 | -0.76135117 | 30.57313167 | Brain_Frontal_Cortex_BA9    | 0.919738662 |
| ENSG00000136235 | chr7_23254525_T_C_b38 | 7.811071516 | 0.098   | 22.75383087 | -0.76135117 | 30.56490239 | Brain_Frontal_Cortex_BA9    | 0.919738662 |
| ENSG00000136235 | chr7_23253479_C_A_b38 | 7.583858969 | 0.0969  | 22.90270216 | -0.757281   | 30.48656113 | Brain_Frontal_Cortex_BA9    | 0.919738662 |
| ENSG00000136235 | chr7_23248690_G_A_b38 | 7.571379327 | 0.097   | 22.90270216 | -0.757281   | 30.47408149 | Brain_Frontal_Cortex_BA9    | 0.919738662 |
| ENSG00000136235 | chr7_23244618_A_G_b38 | 8.100453069 | 0.1002  | 20.81828195 | -0.85043347 | 28.91873502 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23255281_C_T_b38 | 7.95546024  | 0.0991  | 20.81828195 | -0.85043347 | 28.77374219 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23255049_T_C_b38 | 7.911863911 | 0.0987  | 20.81828195 | -0.85043347 | 28.73014586 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23246696_G_A_b38 | 7.907279355 | 0.0987  | 20.81828195 | -0.85043347 | 28.72556131 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23238664_G_T_b38 | 7.862645889 | 0.0984  | 20.81828195 | -0.85043347 | 28.68092784 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23254127_A_G_b38 | 7.819300799 | 0.098   | 20.81828195 | -0.85043347 | 28.63758275 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23254525_T_C_b38 | 7.811071516 | 0.098   | 20.81828195 | -0.85043347 | 28.62935347 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23253479_C_A_b38 | 7.583858969 | 0.0969  | 20.81828195 | -0.85043347 | 28.40214092 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23248690_G_A_b38 | 7.571379327 | 0.097   | 20.81828195 | -0.85043347 | 28.38966128 | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23256914_G_A_b38 | 7.55036735  | 0.0969  | 20.81828195 | -0.85043347 | 28.3686493  | Brain_Putamen_basal_ganglia | 0.928595467 |
| ENSG00000136235 | chr7_23244618_A_G_b38 | 8.100453069 | 0.1002  | 18.75505439 | -0.81653875 | 26.85550746 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23255281_C_T_b38 | 7.95546024  | 0.0991  | 18.75505439 | -0.81653875 | 26.71051463 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23255049_T_C_b38 | 7.911863911 | 0.0987  | 18.75505439 | -0.81653875 | 26.66691831 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23260430_A_C_b38 | 7.892111975 | 0.0987  | 18.77365921 | -0.8144048  | 26.66577119 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23246696_G_A_b38 | 7.907279355 | 0.0987  | 18.75505439 | -0.81653875 | 26.66233375 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23238664_G_T_b38 | 7.862645889 | 0.0984  | 18.75505439 | -0.81653875 | 26.61770028 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23254127_A_G_b38 | 7.819300799 | 0.098   | 18.75505439 | -0.81653875 | 26.57435519 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23254525_T_C_b38 | 7.811071516 | 0.098   | 18.75505439 | -0.81653875 | 26.56612591 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23237166_A_G_b38 | 7.751291264 | 0.0975  | 18.77365921 | -0.8144048  | 26.52495048 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23220895_G_A_b38 | 7.802168307 | 0.0982  | 18.63075851 | -0.81287575 | 26.43292682 | Brain_Caudate_basal_ganglia | 0.926940741 |
| ENSG00000136235 | chr7_23244618_A_G_b38 | 8.100453069 | 0.1002  | 16.32619963 | -0.7796786  | 24.4266527  | Brain_Hypothalamus          | 0.936324124 |
| ENSG00000136235 | chr7_23255281_C_T_b38 | 7.95546024  | 0.0991  | 16.32619963 | -0.7796786  | 24.28165987 | Brain_Hypothalamus          | 0.936324124 |
| ENSG00000136235 | chr7_23255049_T_C_b38 | 7.911863911 | 0.0987  | 16.32619963 | -0.7796786  | 24.23806355 | Brain_Hypothalamus          | 0.936324124 |
| ENSG00000136235 | chr7_23246696_G_A_b38 | 7.907279355 | 0.0987  | 16.32619963 | -0.7796786  | 24.23347899 | Brain_Hypothalamus          | 0.936324124 |
| ENSG00000136235 | chr7_23238664_G_T_b38 | 7.862645889 | 0.0984  | 16.32619963 | -0.7796786  | 24.18884552 | Brain_Hypothalamus          | 0.936324124 |
| ENSG00000136235 | chr7_23254127_A_G_b38 | 7.819300799 | 0.098   | 16.32619963 | -0.7796786  | 24.14550043 | Brain_Hypothalamus          | 0.936324124 |
| ENSG00000136235 | chr7_23254525_T_C_b38 | 7.811071516 | 0.098   | 16.32619963 | -0.7796786  | 24.13727115 | Brain_Hypothalamus          | 0.936324124 |
| ENSG00000136235 | chr7_23244618_A_G_b38 | 8.100453069 | 0.1002  | 13.79837126 | -0.7149775  | 21.89882432 | Brain_Cerebellar_Hemisphere | 0.926678786 |
| ENSG00000136235 | chr7_23255281_C_T_b38 | 7.95546024  | 0.0991  | 13.79837126 | -0.7149775  | 21.7538315  | Brain_Cerebellar_Hemisphere | 0.926678786 |
| ENSG00000136235 | chr7_23255049_T_C_b38 | 7.911863911 | 0.0987  | 13.79837126 | -0.7149775  | 21.71023517 | Brain_Cerebellar_Hemisphere | 0.926678786 |
| ENSG00000136235 | chr7_23246696_G_A_b38 | 7.907279355 | 0.0987  | 13.79837126 | -0.7149775  | 21.70565061 | Brain_Cerebellar_Hemisphere | 0.926678786 |
| ENSG00000136235 | chr7_23238664_G_T_b38 | 7.862645889 | 0.0984  | 13.79837126 | -0.7149775  | 21.66101714 | Brain_Cerebellar_Hemisphere | 0.926678786 |
| ENSG00000178950 | chr4_958159_T_C_b38   | 22.09832377 | -0.2272 | 3.348286601 | 0.24450555  | 25.44661037 | Brain_Hypothalamus          | 0.566600424 |
| ENSG00000178950 | chr4_912343_C_G_b38   | 19.86043573 | -0.1831 | 5.395962714 | 0.2606929   | 25.25639845 | Brain_Hypothalamus          | 0.566600424 |
| ENSG00000178950 | chr4_945299_C_T_b38   | 20.22271821 | -0.179  | 4.271753587 | 0.21229474  | 24.4944718  | Brain_Hypothalamus          | 0.566600424 |



Supplemental Table 5: CORE-BeD/GTeX tissue matching data dictionary

| CORE-BeD training source                             | GTeX tissue model                    |
|------------------------------------------------------|--------------------------------------|
| BRAIN_AMMONS_HORN_84M_FUNCTIONAL_ANNOTATION          | Brain_Hippocampus                    |
| BRAIN_ANGULAR_GYRUS_75F_FUNCTIONAL_ANNOTATION        | Brain_Cortex                         |
| BRAIN_ANGULAR_GYRUS_81M_FUNCTIONAL_ANNOTATION        | Brain_Cortex                         |
| BRAIN_ASTROCYTE_FUNCTIONAL_ANNOTATION                | xx                                   |
| BRAIN_ASTROCYTE_CEREBELLUM_FUNCTIONAL_ANNOTATION     | Brain_Cerebellar_Hemisphere          |
| BRAIN_ASTROCYTE_CEREBELLUM_FUNCTIONAL_ANNOTATION     | Brain_Cerebellum                     |
| BRAIN_ASTROCYTE_HIPPOCAMPUS_FUNCTIONAL_ANNOTATION    | Brain_Hippocampus                    |
| BRAIN_ASTROCYTE_SPINAL_CORD_FUNCTIONAL_ANNOTATION    | xx                                   |
| BRAIN_EMBRYO_112_DAYS_FUNCTIONAL_ANNOTATION          | xx                                   |
| BRAIN_EMBRYO_56_58_DAYS_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_80_DAYS_FUNCTIONAL_ANNOTATION           | xx                                   |
| BRAIN_EMBRYO_105_DAYS_F_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_109_DAYS_F_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_117_DAYS_F_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_120_DAYS_F_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_142_DAYS_F_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_17_WEEKS_F_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_85_DAYS_F_FUNCTIONAL_ANNOTATION         | xx                                   |
| BRAIN_EMBRYO_96_DAYS_F_FUNCTIONAL_ANNOTATION         | xx                                   |
| BRAIN_EMBRYO_101_DAYS_M_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_104_DAYS_M_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_105_DAYS_M_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_122_DAYS_M_FUNCTIONAL_ANNOTATION        | xx                                   |
| BRAIN_EMBRYO_72_76_DAYS_M_FUNCTIONAL_ANNOTATION      | xx                                   |
| BRAIN_CAUDATE_NUCLEUS_75F_FUNCTIONAL_ANNOTATION      | Brain_Caudate_basal_ganglia          |
| BRAIN_CAUDATE_NUCLEUS_78M_FUNCTIONAL_ANNOTATION      | Brain_Caudate_basal_ganglia          |
| BRAIN_CAUDATE_NUCLEUS_81M_FUNCTIONAL_ANNOTATION      | Brain_Caudate_basal_ganglia          |
| BRAIN_CEREBELLAR_CORTEX_78_81M_FUNCTIONAL_ANNOTATION | Brain_Cerebellar_Hemisphere          |
| BRAIN_CEREBELLUM_27_35M_FUNCTIONAL_ANNOTATION        | Brain_Cerebellar_Hemisphere          |
| BRAIN_CEREBELLUM_53M_FUNCTIONAL_ANNOTATION           | Brain_Cerebellar_Hemisphere          |
| BRAIN_CEREBELLAR_CORTEX_78_81M_FUNCTIONAL_ANNOTATION | Brain_Cerebellum                     |
| BRAIN_CEREBELLUM_27_35M_FUNCTIONAL_ANNOTATION        | Brain_Cerebellum                     |
| BRAIN_CEREBELLUM_53M_FUNCTIONAL_ANNOTATION           | Brain_Cerebellum                     |
| BRAIN_CINGULATE_GYRUS_75F_FUNCTIONAL_ANNOTATION      | Brain_Anterior_cingulate_cortex_BA24 |

BRAIN\_CINGULATE\_GYRUS\_81M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_FRONTAL\_CORTEX\_67\_80F\_FUNCTIONAL\_ANNOTATION  
BRAIN\_FRONTAL\_CORTEX\_27\_35M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_FRONTAL\_CORTEX\_67\_80F\_FUNCTIONAL\_ANNOTATION  
BRAIN\_FRONTAL\_CORTEX\_27\_35M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_GERMINAL\_MATRIX\_20\_WEEKS\_M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_GLOBUS\_PALLIDUS\_78\_84M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_INFERIOR\_PARIETAL\_CORTEX\_84M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_HIPPOCAMPUS\_75F\_FUNCTIONAL\_ANNOTATION  
BRAIN\_HIPPOCAMPUS\_73M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MEDULLA\_OBLONGATA\_78\_84M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MIDBRAIN\_78\_84M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MIDDLE\_FRONTAL\_AREA\_75F\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MIDDLE\_FRONTAL\_AREA\_81M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MIDDLE\_FRONTAL\_GYRUS\_78M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MIDDLE\_FRONTAL\_AREA\_75F\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MIDDLE\_FRONTAL\_AREA\_81M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_MIDDLE\_FRONTAL\_GYRUS\_78M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_OCCIPITAL\_LOBE\_84M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_PONS\_78M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_PUTAMEN\_78M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_SUBSTANTIA\_NIGRA\_75F\_FUNCTIONAL\_ANNOTATION  
BRAIN\_SUBSTANTIA\_NIGRA\_81M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_SUPERIOR\_TEMPORAL\_GYRUS\_84M\_FUNCTIONAL\_ANNOTATION  
BRAIN\_TEMPORAL\_LOBE\_75F\_FUNCTIONAL\_ANNOTATION  
BRAIN\_TEMPORAL\_LOBE\_81M\_FUNCTIONAL\_ANNOTATION

Brain\_Anterior\_cingulate\_cortex\_BA24  
Brain\_Cortex  
Brain\_Cortex  
Brain\_Frontal\_Cortex\_BA9  
Brain\_Frontal\_Cortex\_BA9  
xx  
xx  
Brain\_Cortex  
Brain\_Hippocampus  
Brain\_Hippocampus  
xx  
Brain\_Substantia\_nigra  
Brain\_Cortex  
Brain\_Cortex  
Brain\_Cortex  
Brain\_Frontal\_Cortex\_BA9  
Brain\_Frontal\_Cortex\_BA9  
Brain\_Frontal\_Cortex\_BA9  
Brain\_Cortex  
xx  
xx  
Brain\_Substantia\_nigra  
Brain\_Substantia\_nigra  
Brain\_Cortex  
Brain\_Cortex  
Brain\_Cortex

Supplemental Table 6: Human protein atlas cell expression of *HIP1R*

| Cell type                       | Gene            | Gene name    | nTPM  | Cell category                |
|---------------------------------|-----------------|--------------|-------|------------------------------|
| Oligodendrocyte precursor cells | ENSG00000130787 | <i>HIP1R</i> | 158.5 | Glial cells                  |
| Astrocytes                      | ENSG00000130787 | <i>HIP1R</i> | 127.6 | Glial cells                  |
| Oligodendrocytes                | ENSG00000130787 | <i>HIP1R</i> | 109.6 | Glial cells                  |
| Gastric mucus-secreting cells   | ENSG00000130787 | <i>HIP1R</i> | 69.6  | Glandular epithelial cells   |
| Cholangiocytes                  | ENSG00000130787 | <i>HIP1R</i> | 59.1  | Specialized epithelial cells |
| Collecting duct cells           | ENSG00000130787 | <i>HIP1R</i> | 52.5  | Specialized epithelial cells |
| Adipocytes                      | ENSG00000130787 | <i>HIP1R</i> | 49.5  | Adipocytes                   |
| Ductal cells                    | ENSG00000130787 | <i>HIP1R</i> | 46.2  | Specialized epithelial cells |
| Proximal enterocytes            | ENSG00000130787 | <i>HIP1R</i> | 45.3  | Glandular epithelial cells   |
| Serous glandular cells          | ENSG00000130787 | <i>HIP1R</i> | 43.5  | Glandular epithelial cells   |
| Horizontal cells                | ENSG00000130787 | <i>HIP1R</i> | 42.8  | Neuronal cells               |
| Oocytes                         | ENSG00000130787 | <i>HIP1R</i> | 38.2  | Germ cells                   |
| Basal prostatic cells           | ENSG00000130787 | <i>HIP1R</i> | 35.2  | Glandular epithelial cells   |
| Exocrine glandular cells        | ENSG00000130787 | <i>HIP1R</i> | 34    | Glandular epithelial cells   |
| B-cells                         | ENSG00000130787 | <i>HIP1R</i> | 33.2  | Blood & immune cells         |
| Glandular and luminal cells     | ENSG00000130787 | <i>HIP1R</i> | 30.5  | Glandular epithelial cells   |
| Mucus glandular cells           | ENSG00000130787 | <i>HIP1R</i> | 29.8  | Glandular epithelial cells   |
| Distal enterocytes              | ENSG00000130787 | <i>HIP1R</i> | 27.5  | Glandular epithelial cells   |
| Intestinal goblet cells         | ENSG00000130787 | <i>HIP1R</i> | 27.3  | Glandular epithelial cells   |
| Salivary duct cells             | ENSG00000130787 | <i>HIP1R</i> | 24.2  | Specialized epithelial cells |
| Endothelial cells               | ENSG00000130787 | <i>HIP1R</i> | 23.8  | Endothelial cells            |
| Cone photoreceptor cells        | ENSG00000130787 | <i>HIP1R</i> | 22.1  | Neuronal cells               |
| Ionocytes                       | ENSG00000130787 | <i>HIP1R</i> | 20.6  | Glandular epithelial cells   |
| Paneth cells                    | ENSG00000130787 | <i>HIP1R</i> | 20.6  | Glandular epithelial cells   |
| Suprabasal keratinocytes        | ENSG00000130787 | <i>HIP1R</i> | 20.3  | Squamous epithelial cells    |
| Breast myoepithelial cells      | ENSG00000130787 | <i>HIP1R</i> | 19.8  | Glandular epithelial cells   |
| Breast glandular cells          | ENSG00000130787 | <i>HIP1R</i> | 19.5  | Glandular epithelial cells   |
| Granulosa cells                 | ENSG00000130787 | <i>HIP1R</i> | 18.6  | Specialized epithelial cells |
| Hepatocytes                     | ENSG00000130787 | <i>HIP1R</i> | 18.4  | Specialized epithelial cells |
| Alveolar cells type 2           | ENSG00000130787 | <i>HIP1R</i> | 18    | Specialized epithelial cells |
| Proximal tubular cells          | ENSG00000130787 | <i>HIP1R</i> | 16.2  | Specialized epithelial cells |

|                                 |                 |              |
|---------------------------------|-----------------|--------------|
| Rod photoreceptor cells         | ENSG00000130787 | <i>HIP1R</i> |
| Club cells                      | ENSG00000130787 | <i>HIP1R</i> |
| Enteroendocrine cells           | ENSG00000130787 | <i>HIP1R</i> |
| Undifferentiated cells          | ENSG00000130787 | <i>HIP1R</i> |
| T-cells                         | ENSG00000130787 | <i>HIP1R</i> |
| Basal keratinocytes             | ENSG00000130787 | <i>HIP1R</i> |
| Extravillous trophoblasts       | ENSG00000130787 | <i>HIP1R</i> |
| Plasma cells                    | ENSG00000130787 | <i>HIP1R</i> |
| Bipolar cells                   | ENSG00000130787 | <i>HIP1R</i> |
| Ciliated cells                  | ENSG00000130787 | <i>HIP1R</i> |
| Spermatogonia                   | ENSG00000130787 | <i>HIP1R</i> |
| Cardiomyocytes                  | ENSG00000130787 | <i>HIP1R</i> |
| Muller glia cells               | ENSG00000130787 | <i>HIP1R</i> |
| Squamous epithelial cells       | ENSG00000130787 | <i>HIP1R</i> |
| NK-cells                        | ENSG00000130787 | <i>HIP1R</i> |
| Excitatory neurons              | ENSG00000130787 | <i>HIP1R</i> |
| Alveolar cells type 1           | ENSG00000130787 | <i>HIP1R</i> |
| Schwann cells                   | ENSG00000130787 | <i>HIP1R</i> |
| Inhibitory neurons              | ENSG00000130787 | <i>HIP1R</i> |
| Microglial cells                | ENSG00000130787 | <i>HIP1R</i> |
| Prostatic glandular cells       | ENSG00000130787 | <i>HIP1R</i> |
| Basal squamous epithelial cells | ENSG00000130787 | <i>HIP1R</i> |
| Pancreatic endocrine cells      | ENSG00000130787 | <i>HIP1R</i> |
| Basal respiratory cells         | ENSG00000130787 | <i>HIP1R</i> |
| granulocytes                    | ENSG00000130787 | <i>HIP1R</i> |
| Melanocytes                     | ENSG00000130787 | <i>HIP1R</i> |
| Spermatocytes                   | ENSG00000130787 | <i>HIP1R</i> |
| Smooth muscle cells             | ENSG00000130787 | <i>HIP1R</i> |
| Distal tubular cells            | ENSG00000130787 | <i>HIP1R</i> |
| Secretory cells                 | ENSG00000130787 | <i>HIP1R</i> |
| Endometrial stromal cells       | ENSG00000130787 | <i>HIP1R</i> |
| Cytotrophoblasts                | ENSG00000130787 | <i>HIP1R</i> |
| Ovarian stromal cells           | ENSG00000130787 | <i>HIP1R</i> |
| Fibroblasts                     | ENSG00000130787 | <i>HIP1R</i> |
| Late spermatids                 | ENSG00000130787 | <i>HIP1R</i> |

|                                   |
|-----------------------------------|
| 16.2 Neuronal cells               |
| 16 Glandular epithelial cells     |
| 16 Endocrine cells                |
| 15.8 Undifferentiated cells       |
| 15.4 Blood & immune cells         |
| 14.7 Squamous epithelial cells    |
| 14.7 Trophoblast cells            |
| 14.5 Blood & immune cells         |
| 14.4 Neuronal cells               |
| 14.4 Glandular epithelial cells   |
| 13.4 Germ cells                   |
| 11.7 Muscle cells                 |
| 11.2 Glial cells                  |
| 11.1 Squamous epithelial cells    |
| 10.9 Blood & immune cells         |
| 10.8 Neuronal cells               |
| 10.3 Specialized epithelial cells |
| 10.2 Glial cells                  |
| 9.3 Neuronal cells                |
| 8.9 Glial cells                   |
| 8.8 Glandular epithelial cells    |
| 8.6 Squamous epithelial cells     |
| 8.5 Endocrine cells               |
| 8.2 Glandular epithelial cells    |
| 7.2 Blood & immune cells          |
| 6.9 Pigment cells                 |
| 6.4 Germ cells                    |
| 6.2 Muscle cells                  |
| 6.1 Specialized epithelial cells  |
| 4.5 Glandular epithelial cells    |
| 4.3 Mesenchymal cells             |
| 4 Trophoblast cells               |
| 3.5 Mesenchymal cells             |
| 3.4 Mesenchymal cells             |
| 3.4 Germ cells                    |

|                             |                 |              |
|-----------------------------|-----------------|--------------|
| Langerhans cells            | ENSG00000130787 | <i>HIP1R</i> |
| Mesothelial cells           | ENSG00000130787 | <i>HIP1R</i> |
| Macrophages                 | ENSG00000130787 | <i>HIP1R</i> |
| Syncytiotrophoblasts        | ENSG00000130787 | <i>HIP1R</i> |
| dendritic cells             | ENSG00000130787 | <i>HIP1R</i> |
| monocytes                   | ENSG00000130787 | <i>HIP1R</i> |
| Skeletal myocytes           | ENSG00000130787 | <i>HIP1R</i> |
| Leydig cells                | ENSG00000130787 | <i>HIP1R</i> |
| Early spermatids            | ENSG00000130787 | <i>HIP1R</i> |
| Kupffer cells               | ENSG00000130787 | <i>HIP1R</i> |
| Peritubular cells           | ENSG00000130787 | <i>HIP1R</i> |
| Erythroid cells             | ENSG00000130787 | <i>HIP1R</i> |
| Hofbauer cells              | ENSG00000130787 | <i>HIP1R</i> |
| Lymphatic endothelial cells | ENSG00000130787 | <i>HIP1R</i> |
| Sertoli cells               | ENSG00000130787 | <i>HIP1R</i> |

3.3 Blood & immune cells  
3.3 Specialized epithelial cells  
2.6 Blood & immune cells  
2.3 Trophoblast cells  
2.2 Blood & immune cells  
2.2 Blood & immune cells  
2 Muscle cells  
1.7 Endocrine cells  
1.6 Germ cells  
1.4 Blood & immune cells  
1.2 Mesenchymal cells  
1.1 Blood & immune cells  
0.2 Blood & immune cells  
0.2 Endothelial cells  
0 Specialized epithelial cells

Supplemental Table 7: Human protein atlas cell expression of *STX1B*

| Cell type                       | Gene            | Gene name    | nTPM | Cell category                    |
|---------------------------------|-----------------|--------------|------|----------------------------------|
| Horizontal cells                | ENSG00000099365 | <i>STX1B</i> |      | 52.2 Neuronal cells              |
| Excitatory neurons              | ENSG00000099365 | <i>STX1B</i> |      | 35.6 Neuronal cells              |
| Inhibitory neurons              | ENSG00000099365 | <i>STX1B</i> |      | 29.8 Neuronal cells              |
| Late spermatids                 | ENSG00000099365 | <i>STX1B</i> |      | 14.2 Germ cells                  |
| Oligodendrocyte precursor cells | ENSG00000099365 | <i>STX1B</i> |      | 8.5 Glial cells                  |
| Early spermatids                | ENSG00000099365 | <i>STX1B</i> |      | 7.2 Germ cells                   |
| Astrocytes                      | ENSG00000099365 | <i>STX1B</i> |      | 6.8 Glial cells                  |
| Hepatocytes                     | ENSG00000099365 | <i>STX1B</i> |      | 6.2 Specialized epithelial cells |
| Oligodendrocytes                | ENSG00000099365 | <i>STX1B</i> |      | 5.2 Glial cells                  |
| Bipolar cells                   | ENSG00000099365 | <i>STX1B</i> |      | 4.5 Neuronal cells               |
| Microglial cells                | ENSG00000099365 | <i>STX1B</i> |      | 4.5 Glial cells                  |
| Spermatocytes                   | ENSG00000099365 | <i>STX1B</i> |      | 3.8 Germ cells                   |
| Peritubular cells               | ENSG00000099365 | <i>STX1B</i> |      | 2 Mesenchymal cells              |
| Proximal tubular cells          | ENSG00000099365 | <i>STX1B</i> |      | 1.7 Specialized epithelial cells |
| Rod photoreceptor cells         | ENSG00000099365 | <i>STX1B</i> |      | 1.3 Neuronal cells               |
| Spermatogonia                   | ENSG00000099365 | <i>STX1B</i> |      | 1.3 Germ cells                   |
| Muller glia cells               | ENSG00000099365 | <i>STX1B</i> |      | 1.2 Glial cells                  |
| Proximal enterocytes            | ENSG00000099365 | <i>STX1B</i> |      | 1.2 Glandular epithelial cells   |
| Breast myoepithelial cells      | ENSG00000099365 | <i>STX1B</i> |      | 1 Glandular epithelial cells     |
| Endothelial cells               | ENSG00000099365 | <i>STX1B</i> |      | 1 Endothelial cells              |
| granulocytes                    | ENSG00000099365 | <i>STX1B</i> |      | 1 Blood & immune cells           |
| Smooth muscle cells             | ENSG00000099365 | <i>STX1B</i> |      | 0.9 Muscle cells                 |
| Suprabasal keratinocytes        | ENSG00000099365 | <i>STX1B</i> |      | 0.8 Squamous epithelial cells    |
| Exocrine glandular cells        | ENSG00000099365 | <i>STX1B</i> |      | 0.7 Glandular epithelial cells   |
| Fibroblasts                     | ENSG00000099365 | <i>STX1B</i> |      | 0.7 Mesenchymal cells            |
| Adipocytes                      | ENSG00000099365 | <i>STX1B</i> |      | 0.6 Adipocytes                   |
| B-cells                         | ENSG00000099365 | <i>STX1B</i> |      | 0.6 Blood & immune cells         |
| Basal keratinocytes             | ENSG00000099365 | <i>STX1B</i> |      | 0.6 Squamous epithelial cells    |

|                                 |                 |              |                                  |
|---------------------------------|-----------------|--------------|----------------------------------|
| Granulosa cells                 | ENSG00000099365 | <i>STX1B</i> | 0.6 Specialized epithelial cells |
| Kupffer cells                   | ENSG00000099365 | <i>STX1B</i> | 0.6 Blood & immune cells         |
| Lymphatic endothelial cells     | ENSG00000099365 | <i>STX1B</i> | 0.6 Endothelial cells            |
| Ovarian stromal cells           | ENSG00000099365 | <i>STX1B</i> | 0.6 Mesenchymal cells            |
| Syncytiotrophoblasts            | ENSG00000099365 | <i>STX1B</i> | 0.6 Trophoblast cells            |
| T-cells                         | ENSG00000099365 | <i>STX1B</i> | 0.6 Blood & immune cells         |
| Endometrial stromal cells       | ENSG00000099365 | <i>STX1B</i> | 0.5 Mesenchymal cells            |
| Hofbauer cells                  | ENSG00000099365 | <i>STX1B</i> | 0.5 Blood & immune cells         |
| Macrophages                     | ENSG00000099365 | <i>STX1B</i> | 0.5 Blood & immune cells         |
| Ductal cells                    | ENSG00000099365 | <i>STX1B</i> | 0.4 Specialized epithelial cells |
| Erythroid cells                 | ENSG00000099365 | <i>STX1B</i> | 0.4 Blood & immune cells         |
| Ionocytes                       | ENSG00000099365 | <i>STX1B</i> | 0.4 Glandular epithelial cells   |
| dendritic cells                 | ENSG00000099365 | <i>STX1B</i> | 0.4 Blood & immune cells         |
| Breast glandular cells          | ENSG00000099365 | <i>STX1B</i> | 0.3 Glandular epithelial cells   |
| Cardiomyocytes                  | ENSG00000099365 | <i>STX1B</i> | 0.3 Muscle cells                 |
| Langerhans cells                | ENSG00000099365 | <i>STX1B</i> | 0.3 Blood & immune cells         |
| Mesothelial cells               | ENSG00000099365 | <i>STX1B</i> | 0.3 Specialized epithelial cells |
| Squamous epithelial cells       | ENSG00000099365 | <i>STX1B</i> | 0.3 Squamous epithelial cells    |
| Basal respiratory cells         | ENSG00000099365 | <i>STX1B</i> | 0.2 Glandular epithelial cells   |
| Basal squamous epithelial cells | ENSG00000099365 | <i>STX1B</i> | 0.2 Squamous epithelial cells    |
| Club cells                      | ENSG00000099365 | <i>STX1B</i> | 0.2 Glandular epithelial cells   |
| Plasma cells                    | ENSG00000099365 | <i>STX1B</i> | 0.2 Blood & immune cells         |
| Schwann cells                   | ENSG00000099365 | <i>STX1B</i> | 0.2 Glial cells                  |
| Secretory cells                 | ENSG00000099365 | <i>STX1B</i> | 0.2 Glandular epithelial cells   |
| Serous glandular cells          | ENSG00000099365 | <i>STX1B</i> | 0.2 Glandular epithelial cells   |
| Undifferentiated cells          | ENSG00000099365 | <i>STX1B</i> | 0.2 Undifferentiated cells       |
| monocytes                       | ENSG00000099365 | <i>STX1B</i> | 0.2 Blood & immune cells         |
| Alveolar cells type 1           | ENSG00000099365 | <i>STX1B</i> | 0.1 Specialized epithelial cells |
| Basal prostatic cells           | ENSG00000099365 | <i>STX1B</i> | 0.1 Glandular epithelial cells   |
| Ciliated cells                  | ENSG00000099365 | <i>STX1B</i> | 0.1 Glandular epithelial cells   |
| Distal enterocytes              | ENSG00000099365 | <i>STX1B</i> | 0.1 Glandular epithelial cells   |
| Glandular and luminal cells     | ENSG00000099365 | <i>STX1B</i> | 0.1 Glandular epithelial cells   |

|                               |                 |              |                                |
|-------------------------------|-----------------|--------------|--------------------------------|
| Alveolar cells type 2         | ENSG00000099365 | <i>STX1B</i> | 0 Specialized epithelial cells |
| Cholangiocytes                | ENSG00000099365 | <i>STX1B</i> | 0 Specialized epithelial cells |
| Collecting duct cells         | ENSG00000099365 | <i>STX1B</i> | 0 Specialized epithelial cells |
| Cone photoreceptor cells      | ENSG00000099365 | <i>STX1B</i> | 0 Neuronal cells               |
| Cytotrophoblasts              | ENSG00000099365 | <i>STX1B</i> | 0 Trophoblast cells            |
| Distal tubular cells          | ENSG00000099365 | <i>STX1B</i> | 0 Specialized epithelial cells |
| Enteroendocrine cells         | ENSG00000099365 | <i>STX1B</i> | 0 Endocrine cells              |
| Extravillous trophoblasts     | ENSG00000099365 | <i>STX1B</i> | 0 Trophoblast cells            |
| Gastric mucus-secreting cells | ENSG00000099365 | <i>STX1B</i> | 0 Glandular epithelial cells   |
| Intestinal goblet cells       | ENSG00000099365 | <i>STX1B</i> | 0 Glandular epithelial cells   |
| Leydig cells                  | ENSG00000099365 | <i>STX1B</i> | 0 Endocrine cells              |
| Melanocytes                   | ENSG00000099365 | <i>STX1B</i> | 0 Pigment cells                |
| Mucus glandular cells         | ENSG00000099365 | <i>STX1B</i> | 0 Glandular epithelial cells   |
| NK-cells                      | ENSG00000099365 | <i>STX1B</i> | 0 Blood & immune cells         |
| Oocytes                       | ENSG00000099365 | <i>STX1B</i> | 0 Germ cells                   |
| Pancreatic endocrine cells    | ENSG00000099365 | <i>STX1B</i> | 0 Endocrine cells              |
| Paneth cells                  | ENSG00000099365 | <i>STX1B</i> | 0 Glandular epithelial cells   |
| Prostatic glandular cells     | ENSG00000099365 | <i>STX1B</i> | 0 Glandular epithelial cells   |
| Salivary duct cells           | ENSG00000099365 | <i>STX1B</i> | 0 Specialized epithelial cells |
| Sertoli cells                 | ENSG00000099365 | <i>STX1B</i> | 0 Specialized epithelial cells |
| Skeletal myocytes             | ENSG00000099365 | <i>STX1B</i> | 0 Muscle cells                 |



Supplemental Table 8: Idiopathic Parkinson's JTI-PrediXcan TWAS results

| gene            | gene name   | zscore       | effect size  | pvalue   | gwas phenotype   | JTI model                                 | Benjamini-Hochberg corrected pvalue (FDR) |
|-----------------|-------------|--------------|--------------|----------|------------------|-------------------------------------------|-------------------------------------------|
| ENSG00000260911 | AC135050.3  | -10.37335975 | -0.362747115 | 3.28E-25 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 2.33E-20                                  |
| ENSG00000196993 | NPIPB9      | 8.671123285  | 0.186118305  | 4.28E-18 | nalls_2019_Park2 | JTI_Pituitary                             | 1.52E-13                                  |
| ENSG00000106628 | POLD2       | 7.929539636  | 0.271531536  | 2.20E-15 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 5.20E-11                                  |
| ENSG00000196118 | CCDC189     | -7.623852776 | -0.420184018 | 2.46E-14 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9              | 4.37E-10                                  |
| ENSG00000196118 | CCDC189     | -7.344352101 | -0.40763453  | 2.07E-13 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 2.69E-09                                  |
| ENSG00000106628 | POLD2       | 7.331604028  | 0.251484778  | 2.27E-13 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 2.69E-09                                  |
| ENSG00000145214 | DGKQ        | -7.268922204 | -0.221635097 | 3.62E-13 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 3.67E-09                                  |
| ENSG00000115947 | ORC4        | 7.103112724  | 0.362494928  | 1.22E-12 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 1.08E-08                                  |
| ENSG00000145214 | DGKQ        | -7.018173193 | -0.268153361 | 2.25E-12 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 1.77E-08                                  |
| ENSG00000127419 | TMEM175     | 6.97085325   | 0.242142464  | 3.15E-12 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 2.24E-08                                  |
| ENSG00000134864 | GGACT       | -6.84277856  | -0.249421687 | 7.77E-12 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 5.01E-08                                  |
| ENSG00000145214 | DGKQ        | -6.778906064 | -0.509661915 | 1.21E-11 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9              | 7.16E-08                                  |
| ENSG00000215375 | MYL5        | 6.607786253  | 0.276952756  | 3.90E-11 | nalls_2019_Park2 | JTI_Whole_Blood                           | 2.09E-07                                  |
| ENSG00000134864 | GGACT       | -6.599518666 | -0.23789724  | 4.12E-11 | nalls_2019_Park2 | JTI_Whole_Blood                           | 2.09E-07                                  |
| ENSG00000215252 | GOLGA8B     | -6.579545016 | -0.260993069 | 4.72E-11 | nalls_2019_Park2 | JTI_Whole_Blood                           | 2.23E-07                                  |
| ENSG00000178950 | GAK         | 6.520979223  | 0.461796323  | 6.98E-11 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 3.10E-07                                  |
| ENSG00000226746 | SMCR5       | -6.479654784 | -1.073371695 | 9.19E-11 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 3.84E-07                                  |
| ENSG00000106628 | POLD2       | 6.452235107  | 0.27139536   | 1.10E-10 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 4.34E-07                                  |
| ENSG00000145214 | DGKQ        | -6.358670863 | -0.317651871 | 2.04E-10 | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1        | 7.60E-07                                  |
| ENSG00000099377 | HSD3B7      | 6.340704597  | 0.261519462  | 2.29E-10 | nalls_2019_Park2 | JTI_Pituitary                             | 8.11E-07                                  |
| ENSG00000226816 | AC005082.1  | -6.293254652 | -0.281499248 | 3.11E-10 | nalls_2019_Park2 | JTI_Brain_Hypothalamus                    | 1.05E-06                                  |
| ENSG00000106628 | POLD2       | 6.241421601  | 0.268011125  | 4.34E-10 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 1.34E-06                                  |
| ENSG00000136243 | NUPL2       | 6.242971714  | 0.164175197  | 4.29E-10 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 1.34E-06                                  |
| ENSG00000127419 | TMEM175     | 6.215855807  | 0.445919434  | 5.10E-10 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 1.51E-06                                  |
| ENSG00000106628 | POLD2       | 6.193244067  | 0.2685229    | 5.89E-10 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9              | 1.67E-06                                  |
| ENSG00000106628 | POLD2       | 6.157910017  | 0.267503971  | 7.37E-10 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 2.00E-06                                  |
| ENSG00000004468 | CD38        | 6.152685435  | 0.210601975  | 7.62E-10 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 2.00E-06                                  |
| ENSG00000145214 | DGKQ        | -5.966600221 | -0.557539045 | 2.42E-09 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 6.14E-06                                  |
| ENSG00000226816 | AC005082.1  | -5.901092498 | -0.228754314 | 3.61E-09 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 8.83E-06                                  |
| ENSG00000134864 | GGACT       | -5.883519958 | -0.273524932 | 4.02E-09 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 9.19E-06                                  |
| ENSG00000183808 | RBM12B      | 5.888017578  | 0.158392802  | 3.91E-09 | nalls_2019_Park2 | JTI_Liver                                 | 9.19E-06                                  |
| ENSG00000150967 | ABCB9       | 5.873702243  | 0.335871874  | 4.26E-09 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 9.45E-06                                  |
| ENSG00000226816 | AC005082.1  | -5.83111537  | -0.220750106 | 5.51E-09 | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1        | 1.18E-05                                  |
| ENSG00000149656 | LINC00266-1 | -5.816322552 | -0.356764058 | 6.02E-09 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 1.23E-05                                  |
| ENSG00000106628 | POLD2       | 5.814635258  | 0.257747326  | 6.08E-09 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 1.23E-05                                  |
| ENSG00000226816 | AC005082.1  | -5.807909489 | -0.270125068 | 6.33E-09 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 1.25E-05                                  |
| ENSG00000226816 | AC005082.1  | -5.776198833 | -0.216581421 | 7.64E-09 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 1.47E-05                                  |
| ENSG00000004468 | CD38        | 5.764454346  | 0.262897829  | 8.19E-09 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 1.53E-05                                  |

|                 |             |              |              |          |                  |                                           |             |
|-----------------|-------------|--------------|--------------|----------|------------------|-------------------------------------------|-------------|
| ENSG00000178950 | GAK         | -5.724000195 | -0.637022525 | 1.04E-08 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 1.89E-05    |
| ENSG00000226816 | AC005082.1  | -5.710960157 | -0.212244636 | 1.12E-08 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra                | 1.99E-05    |
| ENSG00000226816 | AC005082.1  | -5.698994571 | -0.193014723 | 1.21E-08 | nalls_2019_Park2 | JTI_Liver                                 | 2.09E-05    |
| ENSG00000196118 | CCDC189     | -5.664058506 | -0.206264712 | 1.48E-08 | nalls_2019_Park2 | JTI_Pituitary                             | 2.50E-05    |
| ENSG00000134864 | GGACT       | -5.636419343 | -0.164037934 | 1.74E-08 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 2.86E-05    |
| ENSG00000103496 | STX4        | 5.561877328  | 0.28146043   | 2.67E-08 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 4.29E-05    |
| ENSG00000136243 | NUPL2       | 5.558308754  | 0.127232931  | 2.72E-08 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 4.29E-05    |
| ENSG00000226816 | AC005082.1  | -5.526025928 | -0.170052275 | 3.28E-08 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 5.05E-05    |
| ENSG00000106628 | POLD2       | 5.501946743  | 0.247565792  | 3.76E-08 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 5.67E-05    |
| ENSG00000127419 | TMEM175     | 5.475469665  | 0.390865047  | 4.36E-08 | nalls_2019_Park2 | JTI_Pituitary                             | 6.45E-05    |
| ENSG00000182362 | YBEY        | 5.438459781  | 0.10091721   | 5.37E-08 | nalls_2019_Park2 | JTI_Pituitary                             | 7.78E-05    |
| ENSG00000226816 | AC005082.1  | -5.410860307 | -0.245636229 | 6.27E-08 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 8.70E-05    |
| ENSG00000149922 | TBX6        | 5.410045046  | 0.14032406   | 6.30E-08 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 8.70E-05    |
| ENSG00000167395 | ZNF646      | -5.407823427 | -0.164337331 | 6.38E-08 | nalls_2019_Park2 | JTI_Liver                                 | 8.70E-05    |
| ENSG00000226816 | AC005082.1  | -5.388121812 | -0.191616811 | 7.12E-08 | nalls_2019_Park2 | JTI_Pituitary                             | 9.53E-05    |
| ENSG00000103496 | STX4        | 5.383746162  | 0.273916446  | 7.30E-08 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9              | 9.59E-05    |
| ENSG00000106628 | POLD2       | 5.329243478  | 0.221341659  | 9.86E-08 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.000127225 |
| ENSG00000166323 | C11orf65    | -5.263267361 | -0.236965782 | 1.42E-07 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.0001793   |
| ENSG00000131748 | STARD3      | 5.229913859  | 0.174505067  | 1.70E-07 | nalls_2019_Park2 | JTI_Whole_Blood                           | 0.000211097 |
| ENSG00000130544 | ZNF557      | -5.225255954 | -0.407026225 | 1.74E-07 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.000212748 |
| ENSG00000145214 | DGKQ        | -5.166994439 | -0.151921809 | 2.38E-07 | nalls_2019_Park2 | JTI_Pituitary                             | 0.000286075 |
| ENSG00000144028 | SNRNP200    | 5.140745526  | 0.28004972   | 2.74E-07 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.000323596 |
| ENSG00000011295 | TTC19       | 5.100551406  | 0.481206007  | 3.39E-07 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.000387559 |
| ENSG00000011295 | TTC19       | 5.10059166   | 0.374156897  | 3.39E-07 | nalls_2019_Park2 | JTI_Whole_Blood                           | 0.000387559 |
| ENSG00000080854 | IGSF9B      | -5.091858964 | -0.332105087 | 3.55E-07 | nalls_2019_Park2 | JTI_Pituitary                             | 0.000399319 |
| ENSG00000130787 | HIP1R       | 5.076235703  | 0.180654577  | 3.85E-07 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 0.000420233 |
| ENSG00000149656 | LINC00266-1 | -5.078006191 | -0.257661795 | 3.81E-07 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.000420233 |
| ENSG00000215252 | GOLGA8B     | -5.026042759 | -0.205984402 | 5.01E-07 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.000528951 |
| ENSG00000149656 | LINC00266-1 | -5.024135285 | -0.241150004 | 5.06E-07 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 0.000528951 |
| ENSG00000214941 | ZSWIM7      | -5.023663397 | -0.794189413 | 5.07E-07 | nalls_2019_Park2 | JTI_Pituitary                             | 0.000528951 |
| ENSG00000169313 | P2RY12      | -4.999220298 | -0.174797459 | 5.76E-07 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.000591902 |
| ENSG00000157833 | GAREM2      | -4.960970594 | -0.172785433 | 7.01E-07 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.000710947 |
| ENSG00000163749 | CCDC158     | 4.957635077  | 0.394571763  | 7.14E-07 | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1        | 0.000713072 |
| ENSG00000142185 | TRPM2       | -4.950059413 | -0.135391527 | 7.42E-07 | nalls_2019_Park2 | JTI_Whole_Blood                           | 0.000731099 |
| ENSG00000226816 | AC005082.1  | -4.946823886 | -0.215875658 | 7.54E-07 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.000733168 |
| ENSG00000145214 | DGKQ        | -4.910776151 | -0.139661763 | 9.07E-07 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.000869788 |
| ENSG00000226816 | AC005082.1  | -4.891022178 | -0.148406467 | 1.00E-06 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.000948981 |
| ENSG00000145214 | DGKQ        | -4.881922803 | -0.128781386 | 1.05E-06 | nalls_2019_Park2 | JTI_Liver                                 | 0.00098077  |
| ENSG00000103496 | STX4        | 4.868277275  | 0.354090153  | 1.13E-06 | nalls_2019_Park2 | JTI_Brain_Hypothalamus                    | 0.001024017 |
| ENSG00000103496 | STX4        | 4.870095911  | 0.235824657  | 1.12E-06 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 0.001024017 |
| ENSG00000080854 | IGSF9B      | -4.86023226  | -0.361651306 | 1.17E-06 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.001053022 |
| ENSG00000196118 | CCDC189     | -4.806396165 | -0.188749965 | 1.54E-06 | nalls_2019_Park2 | JTI_Brain_Hypothalamus                    | 0.0013461   |
| ENSG00000145214 | DGKQ        | -4.808739384 | -0.122382183 | 1.52E-06 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.0013461   |
| ENSG00000004468 | CD38        | 4.790735885  | 0.249993786  | 1.66E-06 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 0.001437802 |
| ENSG00000138722 | MMRN1       | 4.778743202  | 0.176504193  | 1.76E-06 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 0.001507874 |

|                 |            |              |              |          |                  |                                           |             |
|-----------------|------------|--------------|--------------|----------|------------------|-------------------------------------------|-------------|
| ENSG00000138722 | MMRN1      | 4.771573949  | 0.159103381  | 1.83E-06 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.00154396  |
| ENSG00000196118 | CCDC189    | -4.758793831 | -0.73651574  | 1.95E-06 | nalls_2019_Park2 | JTI_Brain_Amygdala                        | 1.59E-03    |
| ENSG00000196118 | CCDC189    | -4.760724298 | -0.300679977 | 1.93E-06 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 0.001588269 |
| ENSG00000117280 | RAB29      | -4.759520785 | -0.211450927 | 1.94E-06 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.001588269 |
| ENSG00000196118 | CCDC189    | -4.746504611 | -0.304473154 | 2.07E-06 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.001668655 |
| ENSG00000230658 | KLHL7-DT   | -4.743513125 | -0.079258409 | 2.10E-06 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.001674447 |
| ENSG00000226816 | AC005082.1 | -4.725444582 | -0.123225634 | 2.30E-06 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.001802967 |
| ENSG00000215252 | GOLGA8B    | -4.724005541 | -0.186043742 | 2.31E-06 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9              | 0.001802967 |
| ENSG00000136243 | NUPL2      | 4.701830245  | 0.108573025  | 2.58E-06 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.001988478 |
| ENSG00000182362 | YBEY       | 4.682043001  | 0.087203983  | 2.84E-06 | nalls_2019_Park2 | JTI_Whole_Blood                           | 0.002166904 |
| ENSG00000169242 | EFNA1      | 4.664737255  | 0.423618039  | 3.09E-06 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra                | 0.002332413 |
| ENSG00000145214 | DGKQ       | -4.646923412 | -0.121834929 | 3.37E-06 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.002516312 |
| ENSG00000122550 | KLHL7      | -4.633165508 | -0.266095716 | 3.60E-06 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.002661523 |
| ENSG00000157833 | GAREM2     | -4.619952272 | -0.166176463 | 3.84E-06 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.002807526 |
| ENSG00000196118 | CCDC189    | -4.613943102 | -0.315044695 | 3.95E-06 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 0.002860488 |
| ENSG00000169242 | EFNA1      | 4.605663908  | 0.223915795  | 4.11E-06 | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1        | 0.002946631 |
| ENSG00000163749 | CCDC158    | 4.565213644  | 0.306188614  | 4.99E-06 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra                | 0.003540355 |
| ENSG00000167394 | ZNF668     | -4.560293891 | -0.591272579 | 5.11E-06 | nalls_2019_Park2 | JTI_Whole_Blood                           | 0.00358844  |
| ENSG00000178950 | GAK        | 4.556877708  | 0.289950667  | 5.19E-06 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra                | 0.00361153  |
| ENSG00000178226 | PRSS36     | 4.553618765  | 0.142578336  | 5.27E-06 | nalls_2019_Park2 | JTI_Brain_Amygdala                        | 3.63E-03    |
| ENSG00000169612 | RAMAC      | -4.514240356 | -0.194634076 | 6.35E-06 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.004335114 |
| ENSG00000118804 | STBD1      | -4.505115517 | -0.222489539 | 6.63E-06 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.004482539 |
| ENSG00000166501 | PRKCB      | -4.487339499 | -0.151738847 | 7.21E-06 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.004827219 |
| ENSG00000103549 | RNF40      | 4.479392248  | 0.221115224  | 7.49E-06 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 0.004963643 |
| ENSG00000258413 | AL158801.2 | -4.453231937 | -0.128336463 | 8.46E-06 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 0.005556994 |
| ENSG00000110888 | CAPRIN2    | -4.441720844 | -0.230127434 | 8.92E-06 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.005809018 |
| ENSG00000136243 | NUPL2      | 4.430984272  | 0.135202011  | 9.38E-06 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.006050439 |
| ENSG00000169612 | RAMAC      | -4.411616268 | -0.182421065 | 1.03E-05 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.006558291 |
| ENSG00000178226 | PRSS36     | 4.401457048  | 0.13285578   | 1.08E-05 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 0.006751418 |
| ENSG00000136235 | GNPMB      | -4.403212325 | -0.191948766 | 1.07E-05 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra                | 0.006751418 |
| ENSG00000138722 | MMRN1      | 4.379770736  | 0.131657359  | 1.19E-05 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 0.007394105 |
| ENSG00000196993 | NPIPB9     | 4.376466174  | 0.200427854  | 1.21E-05 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.007441767 |
| ENSG00000178226 | PRSS36     | 4.357516739  | 0.12664142   | 1.32E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.007789899 |
| ENSG00000178226 | PRSS36     | 4.355753718  | 0.124948909  | 1.33E-05 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 0.007789899 |
| ENSG00000178226 | PRSS36     | 4.355358814  | 0.124865647  | 1.33E-05 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.007789899 |
| ENSG00000247775 | SNCA-AS1   | 4.361058134  | 0.182791698  | 1.29E-05 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 0.007789899 |
| ENSG00000178226 | PRSS36     | 4.363298058  | 0.129655542  | 1.28E-05 | nalls_2019_Park2 | JTI_Brain_Hypothalamus                    | 0.007789899 |
| ENSG00000178226 | PRSS36     | 4.360585589  | 0.123679753  | 1.30E-05 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 0.007789899 |
| ENSG00000103549 | RNF40      | 4.300511953  | 0.182397762  | 1.70E-05 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.009863147 |
| ENSG00000111875 | ASF1A      | -4.299755556 | -0.165598127 | 1.71E-05 | nalls_2019_Park2 | JTI_Whole_Blood                           | 0.009863147 |
| ENSG00000163749 | CCDC158    | 4.284648986  | 0.160891361  | 1.83E-05 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.010472592 |
| ENSG00000149922 | TBX6       | 4.267028373  | 0.098826946  | 1.98E-05 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.011231648 |
| ENSG00000145214 | DGKQ       | -4.265494582 | -0.476222528 | 1.99E-05 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 0.011231648 |
| ENSG00000149922 | TBX6       | 4.242957048  | 0.107963181  | 2.21E-05 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 0.012323891 |
| ENSG00000004468 | CD38       | 4.238902078  | 0.193536866  | 2.25E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.012450548 |

|                 |          |              |              |          |                  |                                           |             |
|-----------------|----------|--------------|--------------|----------|------------------|-------------------------------------------|-------------|
| ENSG00000162194 | LBHD1    | 4.234295071  | 0.212718942  | 2.29E-05 | nalls_2019_Park2 | JTI_Whole_Blood                           | 0.012610014 |
| ENSG00000125804 | FAM182A  | -4.206915042 | -0.232600722 | 2.59E-05 | nalls_2019_Park2 | JTI_Pituitary                             | 0.014129095 |
| ENSG00000169242 | EFNA1    | 4.204678535  | 0.41287287   | 2.61E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.0141606   |
| ENSG00000237765 | FAM200B  | 4.197973931  | 0.129882477  | 2.69E-05 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 0.014475811 |
| ENSG00000103549 | RNF40    | 4.19172897   | 0.199169033  | 2.77E-05 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra                | 0.014768296 |
| ENSG00000184110 | EIF3C    | -4.180621638 | -0.22467894  | 2.91E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.015278812 |
| ENSG00000237765 | FAM200B  | 4.18221996   | 0.129464439  | 2.89E-05 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.015278812 |
| ENSG00000149922 | TBX6     | 4.158816119  | 0.100578455  | 3.20E-05 | nalls_2019_Park2 | JTI_Pituitary                             | 0.016689203 |
| ENSG00000105750 | ZNF85    | -4.153174725 | -0.1342845   | 3.28E-05 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.016981328 |
| ENSG00000184110 | EIF3C    | -4.14511717  | -0.214805297 | 3.40E-05 | nalls_2019_Park2 | JTI_Brain_Hippocampus                     | 0.017462172 |
| ENSG00000149922 | TBX6     | 4.123134346  | 0.109722976  | 3.74E-05 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.019077732 |
| ENSG00000004468 | CD38     | 4.111801371  | 0.193347981  | 3.93E-05 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.019895876 |
| ENSG00000237765 | FAM200B  | 4.098475156  | 0.180799586  | 4.16E-05 | nalls_2019_Park2 | JTI_Brain_Cerebellum                      | 0.020779693 |
| ENSG00000149922 | TBX6     | 4.099728311  | 0.103257513  | 4.14E-05 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.020779693 |
| ENSG00000115216 | NRBP1    | -4.096268276 | -0.323532313 | 4.20E-05 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.020831975 |
| ENSG00000149922 | TBX6     | 4.094241467  | 0.10342221   | 4.24E-05 | nalls_2019_Park2 | JTI_Colon_Sigmoid                         | 0.02086909  |
| ENSG00000237765 | FAM200B  | 4.087103526  | 0.153228656  | 4.37E-05 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra                | 0.021372997 |
| ENSG00000136235 | GNPMB    | -4.084276091 | -0.161757827 | 4.42E-05 | nalls_2019_Park2 | JTI_Brain_Amygdala                        | 2.15E-02    |
| ENSG00000138722 | MMRN1    | -4.075850939 | -0.135087268 | 4.58E-05 | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1        | 0.022128208 |
| ENSG00000169313 | P2RY12   | -4.05960922  | -0.148706999 | 4.92E-05 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.02344651  |
| ENSG00000125804 | FAM182A  | -4.059211837 | -0.238215389 | 4.92E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.02344651  |
| ENSG00000237765 | FAM200B  | 4.037023391  | 0.17672431   | 5.41E-05 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 0.025605588 |
| ENSG00000230658 | KLHL7-DT | -4.033637559 | -0.075204681 | 5.49E-05 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 0.025805492 |
| ENSG00000103549 | RNF40    | 4.026254727  | 0.173552443  | 5.67E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.026453658 |
| ENSG00000118804 | STBD1    | -3.987765838 | -0.194268626 | 6.67E-05 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.030335395 |
| ENSG00000196993 | NPIP89   | 3.990631055  | 0.186069955  | 6.59E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.030335395 |
| ENSG00000139351 | SYCP3    | 3.988958834  | 0.156486237  | 6.64E-05 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere           | 0.030335395 |
| ENSG00000125804 | FAM182A  | -3.988825371 | -0.253888288 | 6.64E-05 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 0.030335395 |
| ENSG00000221882 | OR3A2    | -3.981155756 | -0.219828116 | 6.86E-05 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia           | 0.030992929 |
| ENSG00000149922 | TBX6     | 3.977659962  | 0.107455548  | 6.96E-05 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia           | 0.031112989 |
| ENSG00000149922 | TBX6     | 3.975735073  | 0.107546414  | 7.02E-05 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 0.031112989 |
| ENSG00000221882 | OR3A2    | -3.976568822 | -0.215177167 | 6.99E-05 | nalls_2019_Park2 | JTI_Brain_Hypothalamus                    | 0.031112989 |
| ENSG00000237765 | FAM200B  | 3.969738494  | 0.336827583  | 7.20E-05 | nalls_2019_Park2 | JTI_Brain_Amygdala                        | 3.17E-02    |
| ENSG00000221882 | OR3A2    | -3.964575086 | -0.218393003 | 7.35E-05 | nalls_2019_Park2 | JTI_Pituitary                             | 0.032202469 |
| ENSG00000221882 | OR3A2    | -3.950846004 | -0.254231213 | 7.79E-05 | nalls_2019_Park2 | JTI_Brain_Nucleus_accumbens_basal_ganglia | 0.033897786 |
| ENSG00000221882 | OR3A2    | -3.948863745 | -0.277980517 | 7.85E-05 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 0.033971265 |
| ENSG00000136243 | NUPL2    | 3.946558807  | 0.131324553  | 7.93E-05 | nalls_2019_Park2 | JTI_Colon_Transverse                      | 0.034091936 |
| ENSG00000237765 | FAM200B  | 3.943929003  | 0.131162474  | 8.02E-05 | nalls_2019_Park2 | JTI_Brain_Hypothalamus                    | 0.034210406 |
| ENSG00000221882 | OR3A2    | -3.942840228 | -0.183953187 | 8.05E-05 | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1        | 0.034210406 |
| ENSG00000136048 | DRAM1    | 3.936153829  | 0.326481729  | 8.28E-05 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 0.034967825 |
| ENSG00000178226 | PRSS36   | 3.927273261  | 0.174077239  | 8.59E-05 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24  | 0.035959956 |
| ENSG00000247775 | SNCA-AS1 | 3.926584122  | 0.149169823  | 8.62E-05 | nalls_2019_Park2 | JTI_Pituitary                             | 0.035959956 |
| ENSG00000237765 | FAM200B  | 3.924770886  | 0.123587841  | 8.68E-05 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9              | 0.036020006 |
| ENSG00000149922 | TBX6     | 3.916991701  | 0.107727087  | 8.97E-05 | nalls_2019_Park2 | JTI_Adrenal_Gland                         | 0.03672333  |
| ENSG00000213658 | LAT      | -3.918545432 | -0.308518587 | 8.91E-05 | nalls_2019_Park2 | JTI_Brain_Cortex                          | 0.03672333  |

|                 |            |              |              |             |                  |                                          |             |
|-----------------|------------|--------------|--------------|-------------|------------------|------------------------------------------|-------------|
| ENSG00000204316 | MRPL38     | 3.915126346  | 0.17986221   | 9.04E-05    | nalls_2019_Park2 | JTI_Colon_Sigmoid                        | 0.03672333  |
| ENSG00000149922 | TBX6       | 3.914537229  | 0.1053828    | 9.06E-05    | nalls_2019_Park2 | JTI_Whole_Blood                          | 0.03672333  |
| ENSG00000109180 | OCIAD1     | -3.910757052 | -0.195353746 | 9.20E-05    | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1       | 0.03693306  |
| ENSG00000013392 | RWDD2A     | -3.910419023 | -0.281856847 | 9.21E-05    | nalls_2019_Park2 | JTI_Colon_Transverse                     | 0.03693306  |
| ENSG00000163749 | CCDC158    | 3.906372085  | 0.159797353  | 9.37E-05    | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9             | 0.037345818 |
| ENSG00000149922 | TBX6       | 3.89830536   | 0.106471138  | 9.69E-05    | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9             | 0.03818276  |
| ENSG00000178950 | GAK        | 3.899250325  | 0.138036452  | 9.65E-05    | nalls_2019_Park2 | JTI_Colon_Sigmoid                        | 0.03818276  |
| ENSG00000103549 | RNF40      | 3.896556531  | 0.165432366  | 9.76E-05    | nalls_2019_Park2 | JTI_Brain_Cerebellum                     | 0.038246917 |
| ENSG00000163749 | CCDC158    | 3.887650924  | 0.156926042  | 0.000101219 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24 | 0.039459302 |
| ENSG00000166582 | CENPV      | 3.882743883  | 0.087875302  | 0.000103284 | nalls_2019_Park2 | JTI_Brain_Hippocampus                    | 0.040044411 |
| ENSG00000112309 | B3GAT2     | 3.878489201  | 0.164085856  | 0.000105107 | nalls_2019_Park2 | JTI_Colon_Sigmoid                        | 0.040529676 |
| ENSG00000105483 | CARD8      | 3.868241989  | 0.230176498  | 0.000109623 | nalls_2019_Park2 | JTI_Adrenal_Gland                        | 0.041592784 |
| ENSG00000213658 | LAT        | -3.868435133 | -0.31349256  | 0.000109536 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia          | 0.041592784 |
| ENSG00000101412 | E2F1       | -3.870821398 | -0.102124259 | 0.000108469 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra               | 0.041592784 |
| ENSG00000125804 | FAM182A    | -3.856286938 | -0.22664248  | 0.000115122 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9             | 0.043447052 |
| ENSG00000224805 | LINC00853  | 3.851535989  | 0.191164864  | 0.000117379 | nalls_2019_Park2 | JTI_Whole_Blood                          | 0.044064428 |
| ENSG00000163749 | CCDC158    | 3.842990011  | 0.173420994  | 0.000121544 | nalls_2019_Park2 | JTI_Brain_Cortex                         | 0.045387884 |
| ENSG00000178226 | PRSS36     | 3.834155928  | 0.164296104  | 0.000125996 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia          | 0.04680396  |
| ENSG00000080854 | IGSF9B     | -3.832175786 | -0.187874282 | 0.000127015 | nalls_2019_Park2 | JTI_Whole_Blood                          | 0.046936647 |
| ENSG00000166582 | CENPV      | 3.821839158  | 0.107011578  | 1.32E-04    | nalls_2019_Park2 | JTI_Brain_Amygdala                       | 0.047596107 |
| ENSG00000197361 | FBXL22     | -3.819502211 | -0.209894165 | 1.34E-04    | nalls_2019_Park2 | JTI_Brain_Amygdala                       | 0.047596107 |
| ENSG00000166582 | CENPV      | 3.815861096  | 0.108504398  | 0.000135709 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24 | 0.047596107 |
| ENSG00000149922 | TBX6       | 3.813794171  | 0.105665848  | 0.000136849 | nalls_2019_Park2 | JTI_Brain_Anterior_cingulate_cortex_BA24 | 0.047596107 |
| ENSG00000166582 | CENPV      | 3.820956529  | 0.107853276  | 0.000132935 | nalls_2019_Park2 | JTI_Brain_Caudate_basal_ganglia          | 0.047596107 |
| ENSG00000166582 | CENPV      | 3.822343148  | 0.10835955   | 0.00013219  | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere          | 0.047596107 |
| ENSG00000163684 | RPP14      | 3.814415122  | 0.104482867  | 0.000136506 | nalls_2019_Park2 | JTI_Brain_Cerebellum                     | 0.047596107 |
| ENSG00000166582 | CENPV      | 3.819906352  | 0.107384631  | 0.000133502 | nalls_2019_Park2 | JTI_Brain_Cortex                         | 0.047596107 |
| ENSG00000125804 | FAM182A    | -3.817924966 | -0.227748533 | 0.000134579 | nalls_2019_Park2 | JTI_Brain_Cortex                         | 0.047596107 |
| ENSG00000213658 | LAT        | -3.818044976 | -0.188038876 | 0.000134513 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9             | 0.047596107 |
| ENSG00000141337 | ARSG       | -3.814237598 | -0.127196576 | 0.000136604 | nalls_2019_Park2 | JTI_Brain_Spinal_cord_cervical_c-1       | 0.047596107 |
| ENSG00000166582 | CENPV      | 3.814563401  | 0.111759528  | 0.000136424 | nalls_2019_Park2 | JTI_Brain_Substantia_nigra               | 0.047596107 |
| ENSG00000100994 | PYGB       | -3.808962014 | -0.118591512 | 0.000139551 | nalls_2019_Park2 | JTI_Brain_Cerebellar_Hemisphere          | 0.048299077 |
| ENSG00000138722 | MMRN1      | 3.805992788  | 0.113317057  | 1.41E-04    | nalls_2019_Park2 | JTI_Brain_Amygdala                       | 0.048645004 |
| ENSG00000136048 | DRAM1      | 3.803956158  | 0.232525052  | 0.000142403 | nalls_2019_Park2 | JTI_Colon_Sigmoid                        | 0.048809967 |
| ENSG00000234072 | AC074117.1 | 3.800101282  | 0.258663536  | 0.000144637 | nalls_2019_Park2 | JTI_Brain_Frontal_Cortex_BA9             | 0.049337197 |
| ENSG00000234072 | AC074117.1 | 3.796349678  | 0.259547525  | 0.000146842 | nalls_2019_Park2 | JTI_Brain_Cortex                         | 0.049612431 |
| ENSG00000169242 | EFNA1      | 3.796893144  | 0.154933132  | 0.000146521 | nalls_2019_Park2 | JTI_Brain_Putamen_basal_ganglia          | 0.049612431 |

Supplemental Table 9: FUSION TWAS of idiopathic Parkinson's Disease using GTEx Brain tissue models

| ID                    | CHR | P0 | P1        | HSQ       | BEST.GWAS.ID | BEST       |         | EQT.LR2    | EQT.LZ    | EQT.L.GWAS.Z | NSNP    | NWGT | MODEL | TWAS.Z | TWAS.P   | training_model |                         |
|-----------------------|-----|----|-----------|-----------|--------------|------------|---------|------------|-----------|--------------|---------|------|-------|--------|----------|----------------|-------------------------|
|                       |     |    |           |           |              | GWAS.Z     | EQT.LID |            |           |              |         |      |       |        |          |                |                         |
| ENSG00000078618.21    |     | 1  | 51878936  | 51878937  | 0.041996     | rs1275837  | 2.27    | rs12127044 | -0.00837  | -2.66        | 0.4758  | 201  | 201   | susie  | -1.99539 | 0.046          | Brain_Amygdala.nofilter |
| ENSG00000028157.12    |     | 1  | 145214850 | 145214851 | 0.022469     | rs12129861 | -2.45   | rs9728619  | -0.00539  | 1.98         | 2.3668  | 8    | 1     | lasso  | 2.36677  | 0.01794        | Brain_Amygdala.nofilter |
| ENSG000000223612.3    |     | 1  | 145233000 | 145233001 | 0.036906     | rs3753436  | 2.84    | rs1298954  | 0.0143    | 2.44         | 2.251   | 13   | 13    | susie  | 2.71376  | 0.00665        | Brain_Amygdala.nofilter |
| ENSG000000158869.10   |     | 1  | 161215233 | 161215234 | -0.00793     | rs1801274  | -4.09   | rs12403334 | 0.00185   | 2.59         | 2.086   | 391  | 1     | top1   | 2.086    | 0.03698        | Brain_Amygdala.nofilter |
| ENSG000000215146.4    |     | 10 | 42367973  | 42367974  | 0.555295     | rs209385   | 3.09    | rs7086623  | 0.397855  | 7.42         | 2.369   | 183  | 23    | enet   | 2.214    | 0.0268         | Brain_Amygdala.nofilter |
| ENSG000000254860.5    |     | 11 | 8964773   | 8964774   | 0.583033     | rs3365     | -2.68   | rs2653570  | 0.25      | -6.33        | 1.817   | 359  | 359   | susie  | -1.9961  | 0.04592        | Brain_Amygdala.nofilter |
| ENSG000000176102.11   |     | 11 | 33162370  | 33162371  | 0.271554     | rs7107642  | 2.63    | rs10768017 | -0.00159  | -3.27        | 2.0087  | 315  | 9     | lasso  | -2.1103  | 0.03483        | Brain_Amygdala.nofilter |
| ENSG000000255139.1    |     | 11 | 59616428  | 59616429  | 0.070397     | rs17154165 | 3.44    | rs4777729  | 0.0379    | 3.49         | 2.431   | 330  | 330   | susie  | 2.9159   | 0.00355        | Brain_Amygdala.nofilter |
| ENSG000000165891.15   |     | 12 | 77065579  | 77065580  | 0.22388      | rs1498748  | 3.27    | rs11116798 | 0.055346  | -4.61        | -2.03   | 514  | 1     | top1   | 2.03     | 0.0424         | Brain_Amygdala.nofilter |
| ENSG000000067798.14   |     | 12 | 77324640  | 77324641  | -0.022653    | rs11115613 | -3.69   | rs10858749 | -0.001209 | -2.61        | -1.992  | 534  | 1     | top1   | 1.992    | 0.0464         | Brain_Amygdala.nofilter |
| ENSG000000232872.2    |     | 13 | 51910620  | 51910621  | -0.113855    | rs7337432  | 3.71    | rs9535773  | -0.008406 | -2.3         | -2.684  | 350  | 1     | enet   | 2.684    | 0.00727        | Brain_Amygdala.nofilter |
| ENSG000000185352.8    |     | 13 | 96090838  | 96090839  | 0.07161      | rs1010345  | 3.22    | rs17189965 | -0.005133 | 3.2          | -1.057  | 314  | 24    | enet   | -1.9653  | 0.04938        | Brain_Amygdala.nofilter |
| ENSG000000165621.8    |     | 13 | 96994729  | 96994730  | 0.127917     | rs4771267  | 3.7     | rs4771972  | 0.063473  | 3.93         | 2.213   | 355  | 1     | top1   | 2.213    | 0.0269         | Brain_Amygdala.nofilter |
| ENSG000000257126.5    |     | 14 | 28765276  | 28765277  | 0.012123     | rs4981680  | -2.94   | rs8012096  | -0.00756  | 2.18         | -0.436  | 297  | 297   | susie  | 2.072    | 0.03831        | Brain_Amygdala.nofilter |
| ENSG000000150527.16   |     | 14 | 39265283  | 39265284  | -0.064854    | rs17693279 | 3.53    | rs3825549  | -0.00821  | 2.31         | 3.22    | 373  | 1     | top1   | 3.22     | 0.00128        | Brain_Amygdala.nofilter |
| ENSG000000165502.6    |     | 14 | 49620684  | 49620685  | 0.297267     | rs8021453  | 2.85    | rs3007030  | 0.195     | -5.14        | 2.0188  | 379  | 1     | top1   | -2.019   | 0.04351        | Brain_Amygdala.nofilter |
| ENSG000000100614.17   |     | 14 | 60245751  | 60245752  | 0.073552     | rs10151922 | 2.71    | rs7140989  | 0.0116    | 2.98         | 1.0803  | 281  | 281   | susie  | 2.325    | 0.02008        | Brain_Amygdala.nofilter |
| ENSG000000139974.15   |     | 14 | 60981358  | 60981359  | 0.000571     | rs17805820 | 3.24    | rs8005165  | 0.0155    | -2.09        | 2.186   | 308  | 1     | top1   | -2.186   | 0.02882        | Brain_Amygdala.nofilter |
| ENSG000000139973.16   |     | 14 | 61811973  | 61811974  | 0.054658     | rs2245442  | -2.72   | rs17098343 | 0.032     | -3.63        | 2.1003  | 524  | 1     | top1   | -2.1     | 0.0357         | Brain_Amygdala.nofilter |
| ENSG000000054983.16   |     | 14 | 87993664  | 87993665  | 0.186122     | rs10142115 | 3.49    | rs11621530 | 0.017     | 3.59         | 3.3883  | 452  | 452   | susie  | 2.976    | 0.00292        | Brain_Amygdala.nofilter |
| ENSG000000261207.1    |     | 16 | 1752261   | 1752262   | -0.059302    | rs2667684  | -4.32   | rs2302178  | -0.005658 | -2.91        | -2.562  | 461  | 2     | lasso  | 2.1844   | 0.028934       | Brain_Amygdala.nofilter |
| ENSG000000197774.12   |     | 16 | 1773206   | 1773207   | 0.121237     | rs2064289  | -4.33   | rs2575369  | 0.082195  | 3.95         | -3.1371 | 463  | 1     | top1   | -3.1371  | 0.001706       | Brain_Amygdala.nofilter |
| ENSG000000095906.16   |     | 16 | 1782900   | 1782901   | 0.101257     | rs2064289  | -4.32   | rs2235487  | -0.002683 | -3.34        | -3.162  | 471  | 1     | top1   | 3.162    | 0.001567       | Brain_Amygdala.nofilter |
| ENSG000000162039.14   |     | 16 | 1872177   | 1872178   | 0.139572     | rs2064289  | -4.36   | rs173164   | 0.102544  | -4.72        | -3.5987 | 447  | 1     | top1   | 3.5987   | 0.00032        | Brain_Amygdala.nofilter |
| ENSG000000140986.7    |     | 16 | 1957605   | 1957606   | 0.000369     | rs2064289  | -4.39   | rs28396225 | 0.068775  | -3.22        | -3.1696 | 440  | 1     | top1   | 3.1696   | 0.001526       | Brain_Amygdala.nofilter |
| ENSG000000255513.1    |     | 16 | 1964094   | 1964095   | 0.373265     | rs2064289  | -4.39   | rs758334   | 0.183916  | 5.28         | -3.2025 | 439  | 439   | susie  | -3.5333  | 0.00041        | Brain_Amygdala.nofilter |
| ENSG000000140988.15   |     | 16 | 1964859   | 1964860   | 0.02122      | rs2064289  | -4.39   | rs17653749 | -0.008535 | 2.97         | -2.0069 | 438  | 438   | susie  | -3.8327  | 0.000127       | Brain_Amygdala.nofilter |
| ENSG000000183751.14   |     | 16 | 1972036   | 1972037   | 0.022046     | rs2064289  | -4.4    | rs2429186  | -0.000938 | -3.1         | -0.6152 | 434  | 434   | susie  | 2.4707   | 0.013484       | Brain_Amygdala.nofilter |
| ENSG000000008710.19   |     | 16 | 2135897   | 2135898   | 0.097766     | rs8058190  | 4.35    | rs2516740  | -0.004759 | -2.82        | 2.139   | 356  | 1     | top1   | -2.139   | 0.032436       | Brain_Amygdala.nofilter |
| ENSG000000166454.9    |     | 16 | 81035846  | 81035847  | 0.042409     | rs7185427  | -2.98   | rs12920229 | 0.003629  | -3.08        | -2.347  | 667  | 1     | lasso  | 2.347    | 0.018925       | Brain_Amygdala.nofilter |
| ENSG000000125686.11   |     | 17 | 39451285  | 39451286  | -0.016872    | rs16541    | -2.33   | rs16530    | -0.00287  | -2.9         | -2.086  | 321  | 5     | lasso  | 2.1035   | 0.0354         | Brain_Amygdala.nofilter |
| ENSG000000279369.1    |     | 17 | 63700846  | 63700847  | 0.163255     | rs8078549  | 2.52    | rs9944483  | 0.032     | 3.93         | 2.008   | 302  | 302   | susie  | 2.0409   | 0.0413         | Brain_Amygdala.nofilter |
| ENSG000000266173.6    |     | 17 | 63741985  | 63741986  | 0.082883     | rs4465659  | 2.41    | rs4267385  | 0.00299   | -2.58        | 1.783   | 313  | 3     | lasso  | -2.0413  | 0.0412         | Brain_Amygdala.nofilter |
| ENSG000000259384.6    |     | 17 | 63918505  | 63918506  | -0.075126    | rs4465659  | 2.41    | rs7225568  | 0.0528    | -1.6         | 2.338   | 314  | 1     | top1   | -2.338   | 0.0194         | Brain_Amygdala.nofilter |
| ENSG000000268516.2    |     | 19 | 58278807  | 58278808  | -0.071359    | rs260461   | 3.51    | rs260470   | 0.02044   | -1.94        | 2.041   | 340  | 1     | top1   | -2.041   | 0.0413         | Brain_Amygdala.nofilter |
| ENSG000000173960.13   |     | 2  | 23927284  | 23927285  | 0.083714     | rs1991083  | -3.28   | rs1559472  | 0.000155  | 3.16         | 0.432   | 344  | 344   | susie  | 2.26025  | 0.02381        | Brain_Amygdala.nofilter |
| ENSG000000119782.13   |     | 2  | 24049700  | 24049701  | 0.156612     | rs1991083  | -3.42   | rs14388    | -0.00847  | -3.07        | 0.6471  | 302  | 12    | enet   | -2.2536  | 0.02422        | Brain_Amygdala.nofilter |
| ENSG000000223754.1    |     | 2  | 24201697  | 24201698  | 0.003625     | rs918812   | 3.22    | rs11691864 | -0.00817  | -2.51        | 2.6615  | 254  | 254   | susie  | -3.05466 | 0.00225        | Brain_Amygdala.nofilter |
| ENSG000000115380.19   |     | 2  | 55924138  | 55924139  | 0.383706     | rs6545522  | 3.38    | rs1432547  | 0.0298    | -4.15        | -2.086  | 466  | 17    | enet   | 2.92554  | 0.00344        | Brain_Amygdala.nofilter |
| ENSG000000273302.1    |     | 2  | 61199978  | 61199979  | 0.072351     | rs778755   | 3.65    | rs1177285  | -0.0085   | 3.17         | -1.376  | 303  | 303   | susie  | -2.63591 | 0.00839        | Brain_Amygdala.nofilter |
| ENSG000000172086.7    |     | 2  | 88055728  | 88055729  | 0.110014     | rs6712707  | -2.94   | rs1258419  | 0.0216    | 3.2          | -2.5597 | 242  | 1     | top1   | -2.55965 | 0.01048        | Brain_Amygdala.nofilter |
| ENSG000000163586.9    |     | 2  | 88128115  | 88128116  | 0.529608     | rs6712707  | -2.94   | rs6735524  | 0.296     | -6.36        | 1.6781  | 256  | 3     | lasso  | -2.46742 | 0.01361        | Brain_Amygdala.nofilter |
| ENSG000000243466.1    |     | 2  | 88947956  | 88947957  | 0.10214      | rs6712707  | -2.94   | rs1805165  | 0.00624   | 3.03         | 2.2177  | 107  | 107   | susie  | 2.57934  | 0.0099         | Brain_Amygdala.nofilter |
| ENSG000000121152.9    |     | 2  | 96335786  | 96335787  | -0.023204    | rs7582249  | -3.3    | rs13014679 | 0.0215    | -2.22        | 3.112   | 162  | 1     | top1   | -3.112   | 0.00186        | Brain_Amygdala.nofilter |
| ENSG000000213225.7    |     | 2  | 130229378 | 130229379 | 0.0599       | rs4470286  | 2.65    | rs10198499 | 0.0227    | -3.41        | -1.466  | 147  | 147   | susie  | 2.04133  | 0.04122        | Brain_Amygdala.nofilter |
| ENSG000000136718.9    |     | 2  | 130342349 | 130342350 | -0.032194    | rs4470286  | 2.65    | rs6431114  | 0.0289    | 1.87         | 2.5158  | 140  | 1     | top1   | 2.5158   | 0.01188        | Brain_Amygdala.nofilter |
| ENSG000000230646.1    |     | 2  | 130428414 | 130428415 | 0.07078      | rs6722186  | 2.5     | rs2062154  | 0.0137    | -3.1         | 0.701   | 127  | 127   | susie  | -2.19443 | 0.0282         | Brain_Amygdala.nofilter |
| ENSG000000177917.10   |     | 2  | 152717997 | 152717998 | 0.076187     | rs892744   | -3.45   | rs17401154 | -0.00503  | -3.07        | -2.058  | 449  | 9     | enet   | 2.01019  | 0.04441        | Brain_Amygdala.nofilter |
| ENSG000000162989.4    |     | 2  | 154698298 | 154698299 | 0.319537     | rs2053671  | -3.28   | rs765439   | 0.0594    | -4.78        | -2.0484 | 394  | 32    | enet   | 2.95923  | 0.00308        | Brain_Amygdala.nofilter |
| ENSG000000196141.13   |     | 2  | 200305880 | 200305881 | 0.057753     | rs7565480  | 3.38    | rs10432435 | -0.00847  | 2.72         | 0.3232  | 503  | 503   | susie  | -2.53919 | 0.01111        | Brain_Amygdala.nofilter |
| ENSG000000101460.12   |     | 20 | 34546853  | 34546854  | 0.258566     | rs12624640 | 3.2     | rs6142206  | 0.070498  | 4.09         | 3.054   | 303  | 1     | top1   | 3.054    | 0.00225        | Brain_Amygdala.nofilter |
| ENSG000000101464.10</ |     |    |           |           |              |            |         |            |           |              |         |      |       |        |          |                |                         |

|                    |    |           |           |           |            |       |            |           |        |          |     |     |       |         |          |                                               |
|--------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|--------|----------|-----|-----|-------|---------|----------|-----------------------------------------------|
| ENSG00000151806.13 | 4  | 44678556  | 44678557  | 0.21676   | rs10517102 | 3.56  | rs17600797 | 0.146     | -4.79  | -2.638   | 371 | 371 | susie | 2.6462  | 0.00814  | Brain_Amygdala.nofilter                       |
| ENSG00000163281.11 | 4  | 44726594  | 44726595  | 0.420967  | rs10517102 | 3.33  | rs12499960 | 0.244     | 5.61   | -2.429   | 374 | 1   | top1  | -2.429  | 0.0151   | Brain_Amygdala.nofilter                       |
| ENSG00000250125.1  | 4  | 65004499  | 65004500  | 0.090564  | rs17086224 | 3.62  | rs25447    | -0.00581  | -2.81  | -1.845   | 389 | 389 | susie | 1.9654  | 0.0494   | Brain_Amygdala.nofilter                       |
| ENSG00000018189.12 | 4  | 70704800  | 70704801  | 0.063067  | rs11941079 | 4.36  | rs4694090  | -0.00448  | -2.67  | 1.977    | 390 | 1   | lasso | -1.9768 | 0.0481   | Brain_Amygdala.nofilter                       |
| ENSG00000163743.13 | 4  | 75514216  | 75514217  | 0.020677  | rs17220803 | -4.4  | rs2126852  | -0.0065   | 2.56   | -2.13    | 423 | 423 | susie | -2.4622 | 0.0138   | Brain_Amygdala.nofilter                       |
| ENSG00000138769.10 | 4  | 75630715  | 75630716  | -0.041056 | rs17220803 | -3.86 | rs2037012  | -0.0085   | 3.18   | 2.052    | 437 | 7   | lasso | 2.5485  | 0.0108   | Brain_Amygdala.nofilter                       |
| ENSG00000138757.14 | 4  | 75724524  | 75724525  | 0.252076  | rs7685696  | 5.65  | rs7679851  | 0.0625    | -4.15  | 2.945    | 455 | 3   | lasso | -3.0036 | 0.00267  | Brain_Amygdala.nofilter                       |
| ENSG00000138755.5  | 4  | 76007487  | 76007488  | 0.090529  | rs17236661 | -5.83 | rs17253722 | -0.00812  | 2.97   | 2.04     | 466 | 466 | susie | 3.862   | 0.000112 | Brain_Amygdala.nofilter                       |
| ENSG00000156219.16 | 4  | 76011183  | 76011184  | 0.124954  | rs17236661 | -5.83 | rs6832912  | 0.00218   | -2.68  | -3.161   | 468 | 10  | lasso | 3.1602  | 0.00158  | Brain_Amygdala.nofilter                       |
| ENSG00000169245.5  | 4  | 76023496  | 76023497  | -0.013492 | rs17236661 | -5.83 | rs10025494 | 0.00753   | -2.87  | -5.635   | 471 | 1   | top1  | 5.635   | 1.75E-08 | Brain_Amygdala.nofilter                       |
| ENSG000000281731.2 | 4  | 118685340 | 118685341 | 0.326221  | rs4834755  | 3.12  | rs12505513 | 0.162     | 5.65   | 2.476    | 344 | 9   | lasso | 2.479   | 0.0132   | Brain_Amygdala.nofilter                       |
| ENSG00000109452.12 | 4  | 142847431 | 142847432 | 0.023012  | rs1391097  | 2.83  | rs1158692  | -0.0031   | -2.62  | -1.906   | 285 | 2   | lasso | 2.4878  | 0.0129   | Brain_Amygdala.nofilter                       |
| ENSG00000183666.16 | 5  | 21341832  | 21341833  | 0.143792  | rs7717426  | 2.81  | rs1586826  | 0.051449  | 3.76   | 2.2351   | 257 | 1   | top1  | 2.2351  | 0.02541  | Brain_Amygdala.nofilter                       |
| ENSG00000281357.2  | 5  | 91380348  | 91380349  | 0.011064  | rs4458614  | -2.91 | rs4916860  | -0.007638 | -2.73  | 0.5946   | 333 | 333 | susie | -3.0179 | 0.00255  | Brain_Amygdala.nofilter                       |
| ENSG00000164414.17 | 6  | 87470622  | 87470623  | -0.038174 | rs10944312 | 2.94  | rs2787887  | -0.00313  | 3.23   | -1.1227  | 444 | 5   | lasso | -1.9888 | 0.0467   | Brain_Amygdala.nofilter                       |
| ENSG000000272468.1 | 6  | 27123220  | 27123221  | -0.036845 | rs2393929  | -2.18 | rs12211424 | 0.044211  | 2.593  | -2.43    | 318 | 1   | top1  | -2.43   | 0.0151   | Brain_Amygdala.nofilter                       |
| ENSG00000196787.3  | 6  | 27133041  | 27133042  | 0.098568  | rs2393929  | -4.18 | rs6938943  | -0.002884 | -3.159 | -3.0583  | 316 | 1   | lasso | 3.0583  | 0.00223  | Brain_Amygdala.nofilter                       |
| ENSG00000124613.8  | 6  | 27374614  | 27374615  | 0.310654  | rs6918131  | -4.23 | rs6920362  | 0.246921  | -5.733 | -4.114   | 386 | 38  | enet  | 4.0202  | 5.81E-05 | Brain_Amygdala.nofilter                       |
| ENSG00000233822.4  | 6  | 27837759  | 27837760  | -0.028259 | rs6918131  | -4.27 | rs9295749  | -0.003626 | -2.131 | 2.3139   | 487 | 1   | top1  | -2.3139 | 0.0207   | Brain_Amygdala.nofilter                       |
| ENSG00000186088.15 | 7  | 77416399  | 77416400  | 0.195166  | rs6967577  | -2.48 | rs4729435  | 0.034944  | -3.95  | -2.069   | 324 | 14  | enet  | 2.0618  | 0.03923  | Brain_Amygdala.nofilter                       |
| ENSG00000161048.11 | 7  | 103149559 | 103149560 | 0.129648  | rs12540583 | 3.43  | rs13228258 | 0.025687  | -3.24  | 2.082    | 280 | 1   | top1  | -2.082  | 0.03734  | Brain_Amygdala.nofilter                       |
| ENSG00000184903.9  | 7  | 111562516 | 111562517 | 0.04994   | rs214456   | -3.34 | rs1476517  | -0.008173 | -2.71  | -2.6935  | 317 | 2   | lasso | 2.6466  | 0.00813  | Brain_Amygdala.nofilter                       |
| ENSG00000234418.1  | 7  | 122216346 | 122216347 | 0.061792  | rs7785453  | 3.38  | rs10238474 | -0.001743 | -2.73  | -2.176   | 330 | 2   | lasso | -2.2822 | 0.02248  | Brain_Amygdala.nofilter                       |
| ENSG00000241449.5  | 7  | 150040520 | 150040521 | 0.045882  | rs757725   | 2.94  | rs855757   | -0.003634 | 2.5    | 2.1441   | 282 | 1   | top1  | 2.1441  | 0.03202  | Brain_Amygdala.nofilter                       |
| ENSG00000104691.14 | 8  | 30732246  | 30732247  | 0.072773  | rs7013873  | 2.07  | rs7013873  | -0.008277 | 2.85   | 2.0705   | 362 | 8   | lasso | 2.1667  | 0.03026  | Brain_Amygdala.nofilter                       |
| ENSG00000260398.1  | 8  | 78605951  | 78605952  | 0.159839  | rs16919538 | 3.73  | rs6990845  | 0.007704  | 3.86   | 2.598    | 328 | 328 | susie | 3.0177  | 0.00255  | Brain_Amygdala.nofilter                       |
| ENSG00000253553.5  | 8  | 88326835  | 88326836  | 0.260886  | rs2054414  | 2.69  | rs7842248  | 0.016623  | 3.77   | -1.7497  | 294 | 294 | susie | -2.3613 | 0.01821  | Brain_Amygdala.nofilter                       |
| ENSG00000183808.11 | 8  | 93741016  | 93741017  | -0.110867 | rs4735247  | -2.95 | rs4236821  | 0.072332  | 2.17   | 2.176    | 437 | 1   | top1  | 2.176   | 0.02956  | Brain_Amygdala.nofilter                       |
| ENSG00000175305.17 | 8  | 94896677  | 94896678  | -0.09202  | rs2055052  | 3.03  | rs2439641  | 0.001154  | 2.72   | 1.993    | 456 | 1   | top1  | 1.993   | 0.04626  | Brain_Amygdala.nofilter                       |
| ENSG00000272037.1  | 8  | 102256391 | 102256392 | 0.099196  | rs6935     | -3.06 | rs6935     | 0.012642  | -3.8   | -3.0577  | 485 | 1   | lasso | 3.0577  | 0.00223  | Brain_Amygdala.nofilter                       |
| ENSG00000253633.1  | 8  | 102528739 | 102528740 | 0.088738  | rs6935     | -3.09 | rs13260228 | -0.008479 | -3.2   | 2.402    | 490 | 490 | susie | -2.9046 | 0.00368  | Brain_Amygdala.nofilter                       |
| ENSG00000169641.13 | 1  | 23177807  | 23177808  | 0.018371  | rs294223   | 2.46  | rs644749   | -0.006595 | -2.73  | -2.051   | 366 | 2   | lasso | 2.0506  | 0.04031  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000116580.14 | 1  | 155859399 | 155859400 | 0.009625  | rs35643925 | 6.08  | rs2758609  | 0.015344  | -2.79  | -2.1273  | 259 | 1   | lasso | -2.1273 | 0.03339  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000158850.14 | 1  | 161176847 | 161176848 | 0.00699   | rs1801274  | -4.09 | rs4657016  | 0.016601  | -2.33  | 2.011    | 374 | 1   | top1  | -2.011  | 0.04433  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000158874.11 | 1  | 161223630 | 161223631 | 0.089766  | rs1801274  | -4.09 | rs35835689 | 0.001161  | -3.28  | -3.11909 | 403 | 43  | enet  | 3.09277 | 0.00198  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000090104.11 | 1  | 192575726 | 192575727 | 0.042544  | rs1417416  | 2.66  | rs2999593  | 0.002415  | 2.78   | 2.202    | 362 | 1   | top1  | 2.202   | 0.02767  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000117697.14 | 1  | 212791781 | 212791782 | 0.271113  | rs10779598 | 3.15  | rs6679892  | 0.036742  | -3.43  | 2.4545   | 414 | 1   | top1  | -2.4545 | 0.01411  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000225518.2  | 1  | 226083638 | 226083639 | -0.013135 | rs1151815  | -3.05 | rs9728310  | 0.11722   | -2.4   | -2.15275 | 388 | 1   | top1  | 2.15275 | 0.03134  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000054282.15 | 1  | 243256033 | 243256034 | 0.024494  | rs10927035 | 4.3   | rs2171975  | -0.000552 | 2.9    | 2.324    | 285 | 1   | top1  | 2.324   | 0.02013  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000272630.1  | 10 | 73101296  | 73101297  | 0.022777  | rs16930168 | 2.38  | rs4268436  | -0.00648  | 2.28   | 2.184    | 217 | 1   | lasso | 2.184   | 0.029    | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000138286.14 | 10 | 73168165  | 73168166  | 0.041193  | rs16930108 | 2.77  | rs2166336  | 0.00468   | -2.41  | 2.1426   | 216 | 1   | lasso | -2.143  | 0.0321   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000227382.1  | 10 | 73199825  | 73199826  | 0.051597  | rs16930108 | 2.77  | rs7092031  | -0.00438  | 2.84   | 2.0218   | 207 | 1   | lasso | 2.022   | 0.0432   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000255355.1  | 11 | 59669311  | 59669312  | 0.066179  | rs17154165 | 3.44  | rs6591541  | 0.005584  | 2.53   | 3.051    | 326 | 2   | lasso | 3.0516  | 0.00228  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000254911.3  | 11 | 93721512  | 93721513  | 0.206642  | rs12289146 | -2.82 | rs12785450 | 0.021494  | -3.62  | 0.992    | 396 | 15  | enet  | -2.0549 | 0.03989  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000120868.13 | 12 | 98645140  | 98645141  | 0.133874  | rs17028572 | 2.98  | rs11109596 | 0.015257  | -3.66  | -2.77    | 444 | 1   | top1  | 2.77    | 0.00561  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000185352.8  | 13 | 96090838  | 96090839  | 0.016267  | rs1010345  | 3.22  | rs1877475  | 0.01309   | -2.97  | 2.424    | 315 | 1   | lasso | -2.424  | 0.0154   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000165621.8  | 13 | 96994729  | 96994730  | 0.356597  | rs4771267  | 3.71  | rs4771972  | 0.20111   | 5.43   | 2.213    | 353 | 1   | top1  | 2.213   | 0.0269   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000258548.5  | 14 | 27612587  | 27612588  | 0.14627   | rs8016862  | 3.24  | rs10130248 | 0.10594   | 4.21   | 2.135    | 338 | 1   | top1  | 2.135   | 0.032761 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000092208.16 | 14 | 39114222  | 39114223  | -0.010061 | rs17693279 | 3.41  | rs8007769  | -0.0042   | 2.64   | 2.036    | 355 | 1   | lasso | 2.0359  | 0.041757 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000100941.8  | 14 | 39175312  | 39175313  | 0.033688  | rs17693279 | 3.49  | rs718364   | -0.00714  | 3.26   | -1.871   | 369 | 5   | enet  | -1.9774 | 0.048002 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000165502.7  | 14 | 49620684  | 49620685  | 0.339464  | rs8021453  | 2.85  | rs6572597  | 0.29723   | -6.59  | 2.202    | 380 | 380 | susie | -2.1949 | 0.028168 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000165525.16 | 14 | 49853202  | 49853203  | 0.058743  | rs8021453  | 3.16  | rs12588061 | -0.00703  | 2.99   | 0.698    | 371 | 371 | susie | 2.3115  | 0.020805 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000100614.17 | 14 | 60245751  | 60245752  | 0.227805  | rs10151922 | 2.71  | rs11849674 | 0.10255   | 4.56   | 1.795    | 282 | 43  | enet  | 2.3269  | 0.019972 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000054983.16 | 14 | 87993664  | 87993665  | 0.187469  | rs10142115 | 3.49  | rs979812   | 0.01637   | 3.72   | 1.981    | 452 | 452 | susie | 3.2921  | 0.000994 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000100722.18 | 14 | 88562908  | 88562909  | 0.064549  | rs17125093 | -3.1  | rs4243682  | 0.0018    | -3.1   | -2.461   | 439 | 1   | top1  | 2.4612  | 0.013846 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000076344.15 | 16 | 275939    | 275940    | 0.030342  | rs7205963  | -2.64 | rs2685126  | 0.0372    | 3.51   | 2.294    | 336 | 1   | lasso | 2.294   | 0.0218   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000197774.12 | 16 | 1773206   | 1773207   | 0.457953  | rs2064289  | -4.33 | rs1214977  | 0.0457    | 4.33   | -2.7994  | 463 | 47  | enet  | -2.9835 | 0.00285  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000095906.16 | 16 | 1782900   | 1782901   | 0.166218  | rs2064289  | -4.32 | rs2575369  | 0.139     | -4.81  | -3.124   | 471 | 1   | top1  | 3.124   | 0.00178  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000099769.5  | 16 | 1794970   | 1794971   | 0.237678  | rs2667684  | -4.32 | rs28364711 | 0.0295    | -4.61  | -0.5878  | 467 | 28  | enet  | 3.3636  | 0.000769 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000162039.14 | 16 | 1872177   | 1872178   | 0.242581  | rs2064289  | -4.36 | rs1657093  | 0.189     | -5.65  | -3.695   | 447 | 13  | lasso | 3.5832  | 0.000339 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000140986.7  | 16 | 1957605   | 1957606   | 0.27507   | rs2064289  | -4.39 | rs17653749 | -0.000299 | -3.11  | -2.0069  | 440 | 440 | susie | 4.0492  | 5.14E-05 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000207405.1  | 16 | 1963105   | 1963106   | -0.060501 | rs2064289  | -4.39 | rs30991    | 0.016     | -3.54  | 2.317    | 439 | 1   | top1  | -2.317  | 0.0205   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000255513.1  | 16 | 1964094   | 1964095   | 0.547924  | rs2064289  | -4.39 | rs338791   | 0.255     | 6.4    | -3.1267  | 439 | 439 | susie | -3.161  |          |                                               |

|                    |    |             |           |           |            |       |            |           |       |           |     |     |       |          |          |                                               |
|--------------------|----|-------------|-----------|-----------|------------|-------|------------|-----------|-------|-----------|-----|-----|-------|----------|----------|-----------------------------------------------|
| ENSG00000278129.1  | 19 | 58278950    | 58278951  | 0.055977  | rs260461   | 3.51  | rs260468   | -0.00618  | 3.34  | -2.102    | 348 | 1   | lasso | -2.102   | 0.0356   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000182318.5  | 19 | 58327018    | 58327019  | 0.118143  | rs260461   | 3.53  | rs16988659 | 0.00372   | 3.55  | 2.025     | 332 | 4   | lasso | 2.0237   | 0.043    | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000119782.13 | 2  | 24049700    | 24049701  | 0.030677  | rs1991083  | -3.42 | rs1653724  | 0.016102  | -2.54 | 1.732     | 332 | 332 | susie | 2.8779   | 0.004    | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000176732.6  | 2  | 24123476    | 24123477  | 0.060436  | rs1991083  | -3.39 | rs2303287  | 0.00179   | 2.86  | -2.0237   | 304 | 304 | susie | -2.7058  | 0.00681  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000162961.13 | 2  | 32039811    | 32039812  | 0.005284  | rs10181198 | -2.62 | rs458628   | -0.003083 | 2.57  | -2.0944   | 260 | 260 | susie | -2.0278  | 0.04258  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG0000018699.11  | 2  | 32628031    | 32628032  | -0.047844 | rs10181198 | -2.62 | rs11893716 | 0.064124  | -3.74 | -2.142    | 418 | 1   | top1  | 2.142    | 0.03219  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000115380.19 | 2  | 55924138    | 55924139  | 0.140231  | rs6545522  | 3.38  | rs11125603 | 0.0144    | 4     | 1.329     | 466 | 466 | susie | 2.8657   | 0.00416  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000212978.6  | 2  | 61144968    | 61144969  | 0.000567  | rs778755   | 3.63  | rs2901182  | -0.004385 | -2.15 | -2.8825   | 314 | 1   | top1  | 2.8825   | 0.00395  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000270820.5  | 2  | 61471187    | 61471188  | -0.019896 | rs778755   | -3.69 | rs7591402  | 0.004627  | 1.76  | -2.3021   | 299 | 1   | top1  | -2.3021  | 0.02133  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000066032.18 | 2  | 79185230    | 79185231  | 0.048577  | rs1864548  | 2.92  | rs17017286 | -0.004478 | 3.27  | -1.454    | 625 | 625 | susie | -2.3194  | 0.02037  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000163586.9  | 2  | 88128115    | 88128116  | 0.589378  | rs6712707  | -2.94 | rs17350803 | 0.219889  | 6.65  | -2.819    | 251 | 5   | lasso | -2.5981  | 0.00937  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000172071.11 | 2  | 88627537    | 88627538  | 0.054235  | rs6712707  | -2.94 | rs1805165  | 0.060556  | 3.46  | 2.2134    | 224 | 1   | top1  | 2.2134   | 0.02687  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000230006.7  | 2  | 88765806    | 88765807  | 0.085642  | rs6712707  | -2.94 | rs1158603  | 0.014176  | 2.85  | -1.5455   | 158 | 158 | susie | -2.6043  | 0.0092   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000144028.14 | 2  | 96305514    | 96305515  | 0.003237  | rs7582249  | -3.24 | rs597420   | -0.007076 | -2.05 | 1.874     | 155 | 155 | susie | -1.9996  | 0.04554  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000121152.9  | 2  | 96335786    | 96335787  | 0.000532  | rs7582249  | -3.3  | rs2280356  | 0.002475  | -2.79 | -2.788    | 161 | 6   | lasso | 2.7891   | 0.00529  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000071073.12 | 2  | 98731125    | 98731126  | 0.028669  | rs11123677 | -2.84 | rs17493153 | 0.01076   | 3.01  | -1.1474   | 295 | 4   | lasso | -2.189   | 0.02859  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000162989.4  | 2  | 154689298   | 154689299 | 0.248164  | rs2053671  | -3.28 | rs2652461  | 0.073994  | -4.61 | -2.437    | 395 | 395 | susie | 2.2365   | 0.02532  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000153250.19 | 2  | 160493793   | 160493794 | -0.023889 | rs4664323  | 3.64  | rs9646767  | 0.000916  | 2.1   | -2.2506   | 409 | 1   | top1  | -2.2506  | 0.02441  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000144290.16 | 2  | 161427452   | 161427453 | 0.068275  | rs13413741 | -3.03 | rs13413741 | 0.002332  | 2.57  | -3.034    | 361 | 1   | top1  | -3.034   | 0.00241  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000152253.8  | 2  | 168913370   | 168913371 | 0.118495  | rs3770636  | 2.41  | rs16856159 | -0.007314 | -3.64 | 1.8993    | 558 | 14  | enet  | -2.2893  | 0.02206  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000203435.2  | 2  | 195995679   | 195995680 | 0.16564   | rs16850720 | 2.25  | rs17794270 | -0.002402 | -3.61 | -0.994    | 388 | 18  | enet  | -2.3968  | 0.01654  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000119004.15 | 2  | 203238939   | 203238940 | 0.023582  | rs4675317  | -2.96 | rs17637266 | -0.005192 | 2.77  | -0.6155   | 288 | 288 | susie | 2.3084   | 0.02097  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000110460.12 | 20 | 34546853    | 34546854  | 0.10005   | rs12624640 | 3.2   | rs6119534  | 0.04757   | 4.47  | 1.813     | 303 | 19  | enet  | 2.5498   | 0.0108   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000205930.8  | 21 | 32772099    | 32772100  | 0.13897   | rs2008980  | 3.17  | rs2834028  | -0.00219  | -3.8  | 2.891     | 484 | 5   | lasso | -2.2764  | 0.0228   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000172995.16 | 3  | 35638944    | 35638945  | 0.004478  | rs4678509  | -3.34 | rs720214   | -0.00643  | 3.38  | 0.452     | 401 | 401 | susie | 2.34311  | 0.0191   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000144671.10 | 3  | 38282293    | 38282294  | -0.012001 | rs6783789  | -3.46 | rs2070492  | 0.00126   | 2.79  | 0.10808   | 439 | 439 | susie | 2.47116  | 0.0135   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000239732.3  | 3  | 52226162    | 52226163  | 0.014167  | rs6774097  | 2.84  | rs352162   | 4.45E-05  | 2.55  | -2.012    | 321 | 1   | lasso | -2.012   | 0.0442   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000168237.3  | 3  | 52287088    | 52287089  | 0.191977  | rs6774097  | 2.83  | rs610060   | 0.178     | 5.24  | -2.54367  | 335 | 1   | top1  | -2.54367 | 0.011    | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000168268.10 | 3  | 52535053    | 52535054  | 0.056687  | rs6774097  | 2.83  | rs9853056  | 0.00737   | 3.22  | -1.904    | 368 | 3   | lasso | -2.07855 | 0.0377   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000272886.5  | 3  | 53347609    | 53347610  | 0.003902  | rs611914   | -3.36 | rs3821846  | -0.00548  | -2.8  | -0.115    | 405 | 405 | susie | -2.52113 | 0.0117   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000163377.15 | 3  | 68953296    | 68953297  | 0.071141  | rs12714748 | 3.11  | rs13095210 | 0.0021    | -3.19 | -2.21     | 450 | 1   | top1  | 2.21     | 0.0271   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000239519.1  | 3  | 86028006    | 86028007  | 0.28373   | rs6549078  | -3.52 | rs12486982 | 0.182     | 5.25  | 2.06      | 309 | 1   | top1  | 2.06     | 0.0394   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000170017.12 | 3  | 105366908   | 105366909 | 0.026335  | rs12636609 | 3.69  | rs6794273  | 0.0459    | -2.57 | -2.35167  | 435 | 1   | top1  | 2.35167  | 0.0187   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000196542.8  | 3  | 161372879   | 161372880 | 0.005262  | rs2404572  | -3.08 | rs1450519  | 0.00774   | 2.59  | 2.19      | 375 | 1   | lasso | 2.19     | 0.0285   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000234851.4  | 3  | 161429343   | 161429344 | 0.011961  | rs2404572  | -3.08 | rs16833090 | -0.00701  | 2.43  | -2.19938  | 366 | 7   | enet  | -2.38922 | 0.0169   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000173905.8  | 3  | 168095974   | 168095975 | 0.179039  | rs3908223  | 2.13  | rs17735427 | 0.0129    | 3.73  | -0.615    | 334 | 22  | enet  | -2.03265 | 0.0421   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000152990.13 | 4  | 22516053    | 22516054  | 0.058395  | rs2581965  | -2.99 | rs2618937  | -0.006627 | 2.6   | 2.4017    | 353 | 7   | enet  | 2.303    | 0.0213   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000177752.14 | 4  | 44678425    | 44678426  | 0.153758  | rs10517102 | -3.56 | rs17600797 | -0.196822 | 5.06  | -2.6376   | 371 | 14  | enet  | -3.3686  | 0.000756 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000151806.13 | 4  | 44678556    | 44678557  | 0.597111  | rs10517102 | 3.56  | rs12499960 | 0.428599  | -7.69 | -2.429    | 371 | 4   | lasso | 2.4292   | 0.0151   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000163281.11 | 4  | 44726594    | 44726595  | 0.343267  | rs10517102 | 3.33  | rs12499960 | 0.188634  | 5.64  | -2.429    | 374 | 1   | top1  | -2.429   | 0.0151   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000075539.13 | 4  | 48780321    | 48780322  | 0.01968   | rs17576196 | 3.18  | rs6447641  | -0.006621 | 2.71  | 2.646     | 227 | 6   | enet  | 2.2149   | 0.0268   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000250125.1  | 4  | 65004499    | 65004500  | 0.171209  | rs17086224 | 3.62  | rs4544093  | 0.027616  | 4.36  | 2.191     | 391 | 8   | lasso | 2.4855   | 0.0129   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000018189.12 | 4  | 70704800    | 70704801  | 0.079264  | rs11941079 | 4.36  | rs6446982  | -0.007423 | -3.52 | -1.999    | 391 | 1   | lasso | 1.999    | 0.0456   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000138757.14 | 4  | 75724524    | 75724525  | 0.151159  | rs7685696  | 5.65  | rs7679851  | 0.108556  | -4.31 | 2.9455    | 457 | 1   | top1  | -2.9455  | 0.00322  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000156219.16 | 4  | 76011183    | 76011184  | 0.162695  | rs17236661 | -5.83 | rs17001357 | -0.005719 | -3.2  | -0.7073   | 468 | 468 | susie | -3.0694  | 0.00215  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000169245.5  | 4  | 76023496    | 76023497  | -0.006419 | rs17236661 | -5.83 | rs12643261 | -0.003576 | 2.94  | 4.851     | 471 | 2   | lasso | 4.851    | 1.23E-06 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000189157.13 | 4  | 76214039    | 76214040  | 0.493358  | rs17236661 | -5.83 | rs6849069  | 0.251832  | 6.55  | 0.7211    | 479 | 13  | enet  | -2.2775  | 0.0228   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000163629.12 | 4  | 86594314    | 86594315  | 0.040433  | rs13120839 | -3.3  | rs6843070  | -0.004518 | -2.94 | -2.78     | 325 | 325 | susie | 2.3637   | 0.0181   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000251259.1  | 4  | 105140618   | 105140619 | 0.084471  | rs6813396  | 3.02  | rs728123   | 0.004422  | 3.48  | -2.104    | 377 | 13  | enet  | -2.436   | 0.0149   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000281731.2  | 4  | 118685340   | 118685341 | 0.228941  | rs4834755  | 3.12  | rs12505513 | 0.170077  | 5.25  | 2.476     | 344 | 344 | susie | 2.2598   | 0.0238   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000130449.5  | 5  | 61332272    | 61332273  | 0.039158  | rs2270822  | 7.08  | rs34592    | -0.00547  | 2.82  | 5.122     | 387 | 2   | lasso | 5.122    | 1.87E-07 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000113368.11 | 5  | 126776622   | 126776623 | 0.038796  | rs959573   | 3.11  | rs1549189  | 0.012625  | 2.91  | -2.286    | 392 | 6   | lasso | -2.5205  | 0.0117   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000219881.1  | 6  | 69745870    | 69745871  | 0.057041  | rs4706271  | 4.09  | rs9454860  | 0.00564   | -3.08 | -2.180727 | 428 | 1   | top1  | 2.1807   | 0.0292   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000146352.12 | 6  | 122995970   | 122995971 | 0.114211  | rs6899351  | 3.35  | rs4591879  | 0.09037   | -3.72 | 2.361159  | 424 | 1   | top1  | -2.3612  | 0.0182   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000152822.13 | 6  | 146027781   | 146027782 | 0.056183  | rs1078175  | -2.37 | rs1570281  | 0.00113   | -2.62 | -2.162    | 260 | 2   | lasso | 1.9908   | 0.0465   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG000001124613.8 | 6  | 27374614    | 27374615  | 0.432837  | rs6918131  | -4.23 | rs6920362  | 0.267737  | -6.05 | -4.114    | 380 | 1   | top1  | 4.114    | 3.89E-05 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000271755.1  | 6  | 27406963    | 27406964  | 0.171014  | rs6918131  | -4.23 | rs10946921 | 0.066327  | -4.39 | -3.864    | 392 | 392 | susie | 3.6978   | 0.000217 | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000216915.2  | 6  | 27738493    | 27738494  | 0.015878  | rs6918131  | -4.28 | rs6456795  | 0.011265  | -3.31 | -2.6069   | 465 | 2   | lasso | 2.5992   | 0.00934  | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000233225.3  | 7  | 39833793    | 39833794  | -0.011749 | rs17171597 | -3.15 | rs17171637 | -0.000243 | 2.8   | 2.235     | 324 | 9   | lasso | 2.232    | 0.0256   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000231234.2  | 7  | 66423892    | 66423893  | 0.076937  | rs1984651  | -2.36 | rs10479729 | 0.022718  | 3.18  | -2.27021  | 237 | 6   | lasso | -2.271   | 0.0232   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000174353.17 | 7  | 73003729    | 73003730  | 0.037987  | rs17339199 | -2.61 | rs7800425  | -0.007499 | 2.47  | -1.56     | 85  | 2   | lasso | -2.334   | 0.0196   | Brain_Anterior_cingulate_cortex_BA24.nofilter |
| ENSG00000078319.9  | 7  | 100341907</ |           |           |            |       |            |           |       |           |     |     |       |          |          |                                               |



|                    |    |            |           |           |            |       |            |           |       |         |     |           |           |          |                                      |
|--------------------|----|------------|-----------|-----------|------------|-------|------------|-----------|-------|---------|-----|-----------|-----------|----------|--------------------------------------|
| ENSG00000223612.3  | 1  | 145233000  | 145233001 | 0.030275  | rs3753436  | 2.84  | rs1967017  | 0.000107  | 2.34  | 2.023   | 13  | 1 top1    | 2.023     | 0.04307  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000117091.9  | 1  | 160711850  | 160711851 | 0.10686   | rs4233367  | 2.77  | rs569659   | -0.00045  | -2.98 | -0.356  | 427 | 427 susie | 2.107431  | 0.03508  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000158859.9  | 1  | 1611199055 | 161199056 | 0.024392  | rs1801274  | -4.09 | rs12750393 | -0.002583 | 2.9   | -2.1968 | 377 | 1 top1    | -2.196825 | 0.02803  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000158869.10 | 1  | 161215233  | 161215234 | 0.063675  | rs1801274  | -4.09 | rs10494345 | -0.003614 | -3.16 | 1.979   | 393 | 2 lasso   | -2.052965 | 0.04008  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000236031.1  | 1  | 243545597  | 243545598 | 0.034626  | rs10927035 | 4.34  | rs24903393 | -0.001446 | 2.47  | -1.236  | 300 | 13 enet   | -3.11627  | 0.00183  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000215146.4  | 10 | 42367973   | 42367974  | 0.515692  | rs209385   | 3.09  | rs2505807  | 0.274056  | 7.62  | 2.853   | 182 | 35 enet   | 1.982     | 0.04743  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000122952.16 | 10 | 56361274   | 56361275  | 0.066927  | rs11005496 | 2.64  | rs11005496 | 0.006377  | -2.63 | 2.642   | 359 | 1 top1    | -2.642    | 0.00824  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000107758.15 | 10 | 73496023   | 73496024  | 0.110331  | rs2227564  | -2.94 | rs9664184  | -0.003138 | 3.11  | -1.322  | 243 | 243 susie | -2.04     | 0.04136  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000166348.18 | 10 | 73625952   | 73625953  | 0.03115   | rs10762573 | -3.58 | rs11000785 | 0.017242  | 2.26  | -2.178  | 250 | 1 top1    | -2.178    | 0.02941  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000273124.1  | 10 | 90997712   | 90997713  | 0.023331  | rs1274393  | 3.46  | rs1274393  | -0.005596 | 2.98  | 3.17    | 436 | 17 enet   | 2.374     | 0.01762  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000119927.13 | 10 | 112215376  | 112215377 | 0.074182  | rs12146169 | 3.06  | rs2297991  | 0.01947   | -3.61 | -1.989  | 467 | 2 lasso   | 1.979     | 0.04783  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000254860.5  | 11 | 8964773    | 8964774   | 0.575878  | rs3365     | -2.68 | rs3815991  | 0.395657  | 8.28  | -1.7274 | 359 | 15 enet   | -2.203    | 0.027565 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000280798.1  | 11 | 33076460   | 33076461  | 0.12393   | rs7107642  | 2.68  | rs12276196 | 0.051953  | 4.09  | -2.0083 | 306 | 306 susie | -1.963    | 0.049607 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000247151.6  | 11 | 33161656   | 33161657  | 0.072693  | rs7107642  | 2.63  | rs12291056 | -0.004099 | -2.96 | -1.1529 | 317 | 317 susie | 2.419     | 0.015558 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000255139.1  | 11 | 59616428   | 59616429  | 0.138623  | rs17154165 | 3.44  | rs549086   | -0.00588  | 2.78  | 2.553   | 327 | 327 susie | 3.504     | 0.000459 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000255445.1  | 11 | 93152074   | 93152075  | 0.054026  | rs4237557  | 2.77  | rs921983   | -0.003222 | -2.85 | -2.23   | 420 | 1 top1    | 2.23      | 0.025747 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000057294.14 | 12 | 32896839   | 32896840  | 0.079757  | rs11830829 | -4.22 | rs6488097  | 0.048183  | 4.04  | -2.624  | 470 | 1 top1    | -2.624    | 0.00869  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000139218.17 | 12 | 45992119   | 45992120  | 0.004375  | rs7134559  | -4.65 | rs10880869 | 0.015268  | 3.02  | 3.013   | 359 | 1 lasso   | 3.013     | 0.00259  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000066084.12 | 12 | 50505106   | 50505107  | 0.075361  | rs10783342 | 2.99  | rs2359006  | 0.010829  | 3.6   | 0.72    | 296 | 296 susie | 2.2643    | 0.02356  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000165891.15 | 12 | 77065579   | 77065580  | 0.163748  | rs1498748  | 3.27  | rs11116798 | 0.007111  | -3.65 | -2.03   | 521 | 34 enet   | 3.1694    | 0.00153  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000257242.7  | 12 | 92137020   | 92137021  | -0.006261 | rs1385060  | 2.55  | rs7980716  | -0.00134  | 3.22  | 2.122   | 506 | 1 lasso   | 2.1219    | 0.03385  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000165621.8  | 13 | 96994729   | 96994730  | 0.136285  | rs4771267  | 3.7   | rs1933009  | 0.12504   | 4.76  | 2.035   | 358 | 1 top1    | 2.035     | 0.0419   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000125245.12 | 13 | 99261743   | 99261744  | 0.0172    | rs9517533  | 2.88  | rs17709314 | 0.0121    | -2.95 | 2.225   | 494 | 1 top1    | -2.225    | 0.0261   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000257056.2  | 14 | 28785786   | 28785787  | 0.003943  | rs4981680  | -2.94 | rs10148024 | -0.000517 | -2.41 | 2.0062  | 294 | 1 top1    | -2.0062   | 0.04483  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000092208.16 | 14 | 39114223   | 39114223  | -0.009642 | rs17693279 | 3.41  | rs8007769  | 0.065285  | 3.61  | 2.0359  | 358 | 1 top1    | 2.0359    | 0.04176  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000100614.17 | 14 | 60245751   | 60245752  | 0.177815  | rs10151922 | 2.71  | rs7156751  | 0.017307  | 4.4   | 2.707   | 282 | 12 enet   | 2.4693    | 0.01354  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000140030.5  | 14 | 88005123   | 88005124  | 0.090269  | rs10142115 | 3.49  | rs4940431  | 0.011148  | -3.59 | -1.779  | 458 | 7 enet    | -2.3111   | 0.02083  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000100433.15 | 14 | 88326960   | 88326967  | 0.019374  | rs10142115 | 3.49  | rs17204164 | -0.005824 | -3.1  | -0.0477 | 463 | 463 susie | 3.0071    | 0.00264  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000100722.18 | 14 | 88562908   | 88562909  | 0.021862  | rs17125093 | -3.1  | rs4243682  | 0.003759  | -2.92 | -2.4612 | 445 | 1 lasso   | 2.4612    | 0.01385  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000104059.4  | 15 | 29570722   | 29570723  | 0.062495  | rs898253   | 2.64  | rs898253   | 0.02357   | -3.41 | 2.64    | 482 | 1 top1    | -2.64     | 0.00829  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000259511.2  | 15 | 84172489   | 84172490  | 0.131348  | rs1426159  | -2.61 | rs12442117 | 0.012602  | 3.54  | -1.65   | 211 | 211 susie | -2.0594   | 0.03946  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000076344.15 | 16 | 275939     | 275940    | 0.182469  | rs7205963  | -2.64 | rs2685126  | 0.158138  | 5.38  | 2.294   | 338 | 1 top1    | 2.294     | 0.02179  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000197774.12 | 16 | 1773206    | 1773207   | 0.470227  | rs2064289  | -4.32 | rs2575329  | 0.287831  | 7.38  | -3.023  | 463 | 5 lasso   | -3.2757   | 0.001054 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000095906.16 | 16 | 1782900    | 1782901   | 0.164796  | rs2064289  | -4.32 | rs344359   | 0.059495  | -4.58 | -3.48   | 471 | 1 top1    | 3.48      | 0.000501 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000099769.5  | 16 | 1794970    | 1794971   | 0.188198  | rs2667684  | -4.32 | rs28364711 | 0.009216  | -3.53 | -0.588  | 467 | 467 susie | 3.2781    | 0.001045 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000162039.14 | 16 | 1872177    | 1872178   | 0.310648  | rs2064289  | -4.36 | rs1742419  | 0.206975  | -6.34 | -3.691  | 447 | 1 top1    | 3.691     | 0.000223 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000255513.1  | 16 | 1964094    | 1964095   | 0.676102  | rs2064289  | -4.39 | rs338791   | 0.344597  | 7.8   | -3.127  | 439 | 11 lasso  | -3.2951   | 0.000984 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000140988.15 | 16 | 1964859    | 1964860   | -0.047233 | rs2064289  | -4.39 | rs11642833 | -0.005871 | -2.93 | 2.206   | 438 | 1 lasso   | -2.2055   | 0.027417 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000179580.9  | 16 | 1966822    | 1966823   | 0.02751   | rs2064289  | -4.39 | rs2302178  | -0.005875 | 3.44  | -2.562  | 437 | 3 lasso   | -2.8004   | 0.005104 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000183751.14 | 16 | 1972036    | 1972037   | 0.070872  | rs2064289  | -4.4  | rs28396225 | -0.002719 | -2.99 | -3.198  | 434 | 1 lasso   | 3.1977    | 0.001385 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000167964.12 | 16 | 2140802    | 2140803   | 0.096917  | rs8058190  | 4.35  | rs11876    | 0.001383  | -2.77 | 3.077   | 356 | 2 lasso   | -3.3503   | 0.000807 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000102878.16 | 16 | 67164742   | 67164743  | -0.017673 | rs1152084  | -2.33 | rs4783585  | -0.005962 | -2.1  | -2.145  | 258 | 1 top1    | 2.145     | 0.031953 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000265313.5  | 17 | 59526945   | 59526946  | -0.008732 | rs17580385 | -2.45 | rs764424   | 0.0139    | 3.26  | -1.9688 | 304 | 1 lasso   | -1.9688   | 0.049    | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000228979.4  | 17 | 63471603   | 63471604  | -0.008014 | rs16946721 | 2.8   | rs7225568  | -0.00328  | 1.92  | 2.338   | 265 | 1 top1    | 2.338     | 0.0194   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000108604.15 | 17 | 63843064   | 63843065  | 0.114184  | rs7215551  | 2.42  | rs2955245  | 0.0362    | -4.04 | 2.075   | 329 | 1 top1    | -2.075    | 0.038    | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000258890.6  | 17 | 64506731   | 64506732  | 0.02139   | rs11079531 | -2.38 | rs9904013  | -0.0058   | -2.74 | -2.309  | 192 | 1 lasso   | 2.309     | 0.0209   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000170558.8  | 18 | 28177445   | 28177446  | 0.065466  | rs11083255 | -2.33 | rs1122356  | 0.003466  | 3.01  | 2.25    | 431 | 1 top1    | 2.25      | 0.0244   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000278986.1  | 18 | 35972907   | 35972908  | -0.043893 | rs12457209 | 2.67  | rs1513848  | -0.001926 | 2.49  | 2.043   | 437 | 1 top1    | 2.043     | 0.0411   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000134049.5  | 18 | 47176373   | 47176374  | 0.046985  | rs4624285  | -2.8  | rs4624284  | 0.004346  | 3.39  | 1.0084  | 446 | 2 lasso   | 1.9702    | 0.0488   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000268516.2  | 19 | 58278807   | 58278808  | 0.12207   | rs260461   | 3.51  | rs260454   | 0.0268    | 3.87  | -2.189  | 348 | 1 top1    | -2.189    | 0.0286   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000176732.6  | 2  | 24123476   | 24123477  | 0.227413  | rs1991083  | -3.39 | rs2303287  | 0.0509    | 4.55  | -0.2037 | 304 | 24 enet   | -2.6633   | 0.00774  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000115380.19 | 2  | 55924138   | 55924139  | 0.231821  | rs6545522  | 3.38  | rs7601401  | 0.00745   | 4.32  | 2.6478  | 466 | 7 enet    | 1.9826    | 0.04741  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000233426.3  | 2  | 58251439   | 58251440  | 0.019625  | rs4233972  | 2.65  | rs11896571 | -0.00537  | -2.79 | 2.238   | 340 | 1 lasso   | -2.238    | 0.02522  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000271889.1  | 2  | 61162104   | 61162105  | -0.022298 | rs778755   | 3.63  | rs2901182  | 0.0366    | -2.75 | -2.8842 | 311 | 1 top1    | 2.8842    | 0.00392  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000273302.1  | 2  | 61199978   | 61199979  | 0.072932  | rs778755   | 3.65  | rs2290324  | 0.0513    | -3.84 | 2.75    | 303 | 303 susie | -2.9255   | 0.00344  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000270820.5  | 2  | 61471187   | 61471188  | 0.028813  | rs778755   | 3.69  | rs7591402  | 0.0747    | 3.95  | -2.3021 | 299 | 1 top1    | -2.3021   | 0.02133  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000172023.7  | 2  | 79087992   | 79087993  | 0.088584  | rs1864548  | 2.92  | rs6751052  | 0.0081    | -3.96 | 1.12    | 571 | 571 susie | -3.1568   | 0.00159  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000115386.5  | 2  | 79120457   | 79120458  | 0.110854  | rs1864548  | 2.92  | rs1448210  | -0.00586  | 3.08  | -2.5    | 566 | 566 susie | -3.2769   | 0.00105  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000153574.8  | 2  | 88691643   | 88691644  | 0.071063  | rs6712707  | -2.94 | rs6733320  | 0.0202    | -3.28 | -2.4482 | 199 | 1 top1    | 2.4482    | 0.01436  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000211597.2  | 2  | 88861922   | 88861923  | 0.081292  | rs6712707  | -2.94 | rs13045    | -0.00243  | 3.45  | 2.598   | 134 | 134 susie | 2.9339    | 0.00335  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000213355.3  | 2  | 94737336   | 94737337  | 0.001425  | rs3113002  | -3.29 | rs3105099  | -0.00369  | 2.27  | -3.199  | 64  | 64 susie  | -3.2406   | 0.00119  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000121152.9  | 2  | 96335786   | 96335787  | 0.069272  | rs7582249  | -3.3  | rs1168973  | -0.00305  | -2.74 | -1.925  | 163 | 163 susie | 2.4687    | 0.01356  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000235480.1  | 2  | 96532305   | 96532306  | -0.02093  | rs7582249  | -3.28 | rs13014679 | -0.000133 | -2.78 | 3.112   | 213 | 1 top1    | -3.112    | 0.00186  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000273306.1  | 2  | 99405217   | 99405218  | 0.002577  | rs17022634 | 2.81  | rs1366762  | -0.000417 | -2.15 | 2.094   | 325 | 4 enet    | -3.2472   | 0.00117  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000213225.7  | 2  | 130229378  |           |           |            |       |            |           |       |         |     |           |           |          |                                      |

|                    |    |           |           |           |            |       |            |           |       |          |     |     |       |           |          |                                      |
|--------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|-------|----------|-----|-----|-------|-----------|----------|--------------------------------------|
| ENSG00000173705.8  | 3  | 33219214  | 33219215  | 0.39158   | rs1878887  | -2.87 | rs4678778  | 0.0241    | 4.04  | 1.551    | 357 | 15  | enet  | 2.0291    | 0.0425   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000180929.5  | 3  | 51955313  | 51955314  | 0.054328  | rs1060330  | -2.64 | rs699469   | 0.0043    | 3.3   | -2.417   | 232 | 1   | top1  | -2.417    | 0.0156   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000164087.7  | 3  | 52154689  | 52154690  | -0.030252 | rs6774097  | 2.81  | rs730050   | -0.00559  | -2.55 | -2.3506  | 300 | 1   | lasso | 2.3506    | 0.0187   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000239732.3  | 3  | 52226162  | 52226163  | 0.058749  | rs6774097  | 2.84  | rs187084   | 0.000543  | -3.19 | 2.077    | 320 | 1   | lasso | -2.077    | 0.0378   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000168273.7  | 3  | 52534012  | 52534013  | 0.003723  | rs6774097  | 2.83  | rs2276816  | -0.00571  | 2.32  | 0.8486   | 368 | 368 | susie | 2.038     | 0.0416   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000170017.12 | 3  | 105366908 | 105366909 | 0.073215  | rs12636609 | 3.69  | rs2399047  | -0.005    | -3.11 | 0.977    | 435 | 16  | enet  | -2.3458   | 0.019    | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000152990.13 | 4  | 22516053  | 22516054  | 0.131934  | rs2581965  | -2.99 | rs2439468  | 0.032435  | -3.67 | -2.59    | 353 | 1   | top1  | 2.59      | 0.0096   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000035928.15 | 4  | 39366374  | 39366375  | 0.006528  | rs16994921 | 3.13  | rs4975015  | -0.005793 | -2.79 | 1.627    | 418 | 2   | lasso | -2.352351 | 0.01866  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000224097.5  | 4  | 39480254  | 39480255  | 0.411734  | rs2566103  | 2.38  | rs13144464 | 0.283172  | 7.25  | 2.205    | 366 | 7   | lasso | 1.97885   | 0.04783  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000177752.14 | 4  | 44678425  | 44678426  | 0.163463  | rs10517102 | 3.56  | rs1532194  | 0.078865  | 4.74  | -2.222   | 372 | 372 | susie | -2.529462 | 0.01142  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000151806.13 | 4  | 44678556  | 44678557  | 0.57094   | rs10517102 | 3.56  | rs12499960 | 0.442022  | -9.03 | -2.429   | 372 | 372 | susie | 2.262075  | 0.02369  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000163281.11 | 4  | 44726594  | 44726595  | 0.429547  | rs10517102 | 3.33  | rs12499960 | 0.31516   | 7.67  | -2.429   | 375 | 375 | susie | -2.538942 | 0.01112  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000163743.13 | 4  | 75514216  | 75514217  | 0.147716  | rs17220803 | -4.37 | rs786688   | -0.002235 | -3.25 | 0.619    | 424 | 424 | susie | -2.474001 | 0.01336  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000174792.10 | 4  | 75556047  | 75556048  | 0.051439  | rs17220803 | -4.16 | rs2061742  | 0.111861  | 4.71  | 2.5997   | 428 | 1   | top1  | 2.599695  | 0.00933  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000138769.10 | 4  | 75630715  | 75630716  | 0.145027  | rs17220803 | -3.84 | rs6852678  | 0.0262    | 3.9   | 1.7786   | 439 | 439 | susie | 2.694449  | 0.00705  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000138757.14 | 4  | 75724524  | 75724525  | 0.142084  | rs7685696  | 5.65  | rs34165603 | 0.077042  | -4.28 | 3.0439   | 437 | 1   | top1  | -3.043946 | 0.00233  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000156194.17 | 4  | 75902570  | 75902571  | 0.165792  | rs17236661 | -5.83 | rs186562   | 0.001545  | -3.64 | -2.3767  | 446 | 446 | susie | 2.934989  | 0.00334  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000198301.11 | 4  | 75990961  | 75990962  | -0.039668 | rs17236661 | -5.83 | rs2037012  | 0.017234  | 2.39  | 2.0132   | 461 | 1   | top1  | 2.013245  | 0.04409  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000138755.5  | 4  | 76007487  | 76007488  | -0.01673  | rs17236661 | -5.83 | rs2037012  | -0.005445 | 2.13  | 2.03     | 469 | 1   | top1  | 2.029989  | 0.04236  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000189157.13 | 4  | 76214039  | 76214040  | 0.488976  | rs17236661 | -5.83 | rs1876539  | 0.383213  | -8.22 | 4.5102   | 482 | 13  | enet  | -3.265595 | 0.00109  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000067248.9  | 5  | 55307721  | 55307722  | 0.172502  | rs1423249  | 2.81  | rs10940474 | 0.0037    | 3.16  | 1.4597   | 385 | 16  | enet  | 2.3324    | 0.01968  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000175749.11 | 5  | 103032375 | 103032376 | 0.2494    | rs2288788  | -3.7  | rs1826673  | 0.320094  | 7.51  | -3.2449  | 307 | 1   | top1  | -3.2449   | 0.00118  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000249421.1  | 5  | 129460688 | 129460689 | 0.068743  | rs888899   | 3.93  | rs7704061  | -0.004879 | 3.01  | 2.0421   | 394 | 18  | enet  | 2.2029    | 0.0276   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000111832.12 | 6  | 116571366 | 116571367 | 0.041497  | rs1567700  | 2.19  | rs170951   | 0.008301  | 2.37  | -1.966   | 368 | 1   | top1  | -1.966    | 0.0493   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000111875.7  | 6  | 118894356 | 118894357 | 0.074483  | rs6932585  | -3.98 | rs2295709  | -0.005843 | -3.2  | -1.587   | 384 | 384 | susie | 2.71806   | 0.00657  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000111877.17 | 6  | 118935161 | 118935162 | 0.003214  | rs6932585  | -3.98 | rs1889561  | -0.005588 | -2.81 | 1.202    | 382 | 382 | susie | -2.37874  | 0.01737  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000146352.12 | 6  | 122995970 | 122995971 | 0.176627  | rs6899351  | 3.35  | rs7762002  | 0.131502  | -5.13 | 1.975    | 424 | 1   | top1  | -1.97467  | 0.04831  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000234084.1  | 6  | 135301567 | 135301568 | 0.222264  | rs3734213  | 2.81  | rs2207000  | 0.192358  | -5.81 | 0.97     | 331 | 15  | enet  | -2.07497  | 0.03799  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000124613.8  | 6  | 27374614  | 27374615  | 0.39904   | rs6918131  | -4.24 | rs6920362  | 0.343555  | -7.74 | -4.114   | 372 | 37  | enet  | 3.9949    | 6.47E-05 | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000096654.15 | 6  | 27473117  | 27473118  | 0.15871   | rs6918131  | -4.23 | rs7509     | 0.097011  | 4.49  | -2.608   | 405 | 1   | top1  | -2.608    | 0.00911  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000188185.11 | 7  | 39733631  | 39733632  | 0.27033   | rs17171597 | -3.15 | rs1113117  | 0.045681  | 4.18  | 3.09     | 356 | 1   | top1  | 3.09      | 0.002    | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000135164.18 | 7  | 87152420  | 87152421  | 0.165244  | rs4728658  | -2.17 | rs2214104  | 0.008855  | 3.12  | -0.312   | 466 | 21  | enet  | -2.103271 | 0.0354   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000233025.1  | 7  | 103089609 | 103089610 | 0.177739  | rs12540583 | -3.43 | rs7779121  | 0.002417  | -2.87 | 2.173    | 248 | 1   | top1  | -2.173    | 0.0298   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000105989.8  | 7  | 117323288 | 117323289 | 0.128537  | rs6947329  | 2.44  | rs10953842 | 0.004531  | -4.02 | 2.359    | 316 | 18  | enet  | -2.346999 | 0.0189   | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000253878.5  | 8  | 94950036  | 94950037  | 0.071911  | rs7461765  | -3.18 | rs7835314  | -0.00467  | -3.18 | 3.027    | 499 | 1   | lasso | -3.027    | 0.00247  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000104517.12 | 8  | 102412840 | 102412841 | 0.118293  | rs6935     | -3.07 | rs2436863  | -0.00288  | 3.03  | 0.507    | 483 | 483 | susie | 2.056141  | 0.03977  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000253877.5  | 8  | 111027432 | 111027433 | -0.004163 | rs6983489  | 2.84  | rs10283219 | -0.00561  | 2.12  | 1.7833   | 232 | 3   | enet  | 2.128166  | 0.03332  | Brain_Caudate_basal_ganglia.nofilter |
| ENSG00000142765.17 | 1  | 27342019  | 27342020  | 0.500849  | rs199775   | 2.29  | rs17262181 | 0.0455    | -4.84 | 0.95758  | 232 | 27  | enet  | -2.0091   | 0.044527 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000224680.4  | 1  | 52368676  | 52368677  | 0.003395  | rs7518390  | 3.5   | rs6686035  | -0.00294  | -2.17 | 0.96     | 253 | 253 | susie | -2.58027  | 0.009872 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000281571.2  | 1  | 145214850 | 145214851 | 0.022468  | rs12129861 | -2.45 | rs1967017  | -0.00111  | 2.36  | 2.023    | 8   | 4   | enet  | 2.1388    | 0.032452 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000026751.16 | 1  | 160739056 | 160739057 | 0.082917  | rs2307426  | -2.81 | rs1553459  | -0.00609  | 3.16  | 2.49429  | 442 | 6   | lasso | 3.50456   | 0.000457 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000143256.4  | 1  | 161118084 | 161118085 | 0.241358  | rs1801274  | -4.09 | rs512645   | 0.0102    | -3.35 | 1.029    | 401 | 15  | enet  | -2.00452  | 0.045014 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000236905.2  | 1  | 212824026 | 212824027 | 0.041411  | rs10779998 | 3.15  | rs3738800  | -0.00132  | 2.8   | -2.22506 | 415 | 1   | top1  | -2.22506  | 0.026078 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000163041.9  | 1  | 226061876 | 226061877 | 0.664087  | rs1151815  | -3.05 | rs12066979 | 0.23      | 7.4   | 1.35041  | 383 | 383 | susie | 1.96672   | 0.049216 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000225518.2  | 1  | 226083638 | 226083639 | 0.135415  | rs1151815  | -3.05 | rs10127776 | 0.0843    | 4.7   | 1.951    | 388 | 388 | susie | 2.17751   | 0.029442 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000236031.1  | 1  | 243545597 | 243545598 | 0.121215  | rs10927035 | 4.34  | rs14403    | 0.0517    | 3.72  | 2.90747  | 300 | 1   | top1  | 2.90747   | 0.003644 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000165996.13 | 10 | 17617376  | 17617377  | 0.040098  | rs10508540 | -2.92 | rs10508542 | -0.003488 | 2.68  | -2.513   | 495 | 1   | top1  | -2.513    | 0.01197  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000215146.4  | 10 | 42367973  | 42367974  | 0.65232   | rs209385   | 3.09  | rs2505822  | 0.493581  | 8.89  | 2.5182   | 179 | 16  | enet  | 2.1468    | 0.03181  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000279863.1  | 10 | 50334537  | 50334538  | 0.105329  | rs4935738  | 3.27  | rs17518471 | 0.009155  | 2.89  | 2.2439   | 304 | 304 | susie | 2.3541    | 0.01857  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000232706.3  | 10 | 50676742  | 50676743  | 0.071091  | rs2339624  | 3.35  | rs2813299  | -0.003684 | 3.25  | 1.2978   | 429 | 16  | enet  | 3.0181    | 0.00254  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000156026.14 | 10 | 72692130  | 72692131  | 0.334854  | rs11815867 | 2.47  | rs3009540  | 0.25174   | 6.65  | 1.995    | 264 | 264 | susie | 2.3191    | 0.02039  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000122884.12 | 10 | 73096973  | 73096974  | 0.021357  | rs16930168 | 2.38  | rs3000972  | -0.004279 | 2.36  | 2.1895   | 217 | 1   | lasso | 2.1895    | 0.02856  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000272791.1  | 10 | 73630555  | 73630556  | 0.048161  | rs2131960  | -3.58 | rs2688621  | -0.001934 | -2.61 | -2.098   | 245 | 1   | top1  | 2.098     | 0.03591  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000119927.13 | 10 | 112215376 | 112215377 | 0.20689   | rs12146169 | 3.06  | rs3824627  | 0.131645  | -4.91 | -2.239   | 467 | 467 | susie | 2.301     | 0.02139  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG000000084463.7 | 12 | 14803540  | 14803540  | -0.035042 | rs2417414  | 2.48  | rs17835052 | -0.004874 | -2.71 | -2.256   | 368 | 1   | lasso | 2.256     | 0.024071 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000273015.2  | 12 | 45727774  | 45727775  | 0.096372  | rs7134559  | -4.58 | rs7316454  | 0.070918  | -3.63 | -3.569   | 372 | 1   | top1  | 3.5688    | 0.000359 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000139218.17 | 12 | 45992119  | 45992120  | 0.037211  | rs7134559  | -4.65 | rs11183229 | -0.003497 | 3.03  | 2.441    | 359 | 1   | lasso | 2.4406    | 0.014664 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000096084.12 | 12 | 50505106  | 50505107  | 0.060446  | rs10783342 | 2.99  | rs10747586 | 0.002799  | 2.74  | 2.076    | 296 | 1   | top1  | 2.076     | 0.037894 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000166130.14 | 12 | 98645112  | 98645113  | 0.253764  | rs17028572 | 2.98  | rs12371097 | 0.120386  | 5.06  | 1.546    | 443 | 443 | susie | 1.9753    | 0.048235 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000120868.13 | 12 | 98645140  | 98645141  | 0.266351  | rs17028572 | 2.98  | rs11109582 | 0.013201  | -3.81 | -1.815   | 443 | 443 | susie | 2.9608    | 0.003068 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000120662.15 | 13 | 41263574  | 41263577  | 0.259355  | rs9562278  | 3.13  | rs12873706 | 0.201658  | -5.75 | 2.07     | 345 | 1   | top1  | -2.07     | 0.0384   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000165502.6  | 14 | 49620684  | 49620685  | 0.58081   | rs8021453  | 2.85  | rs3007030  | 0.53129   | -9.15 | 2.0188   | 380 | 1   | top1  | -2.0188   | 0.04351  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000100614.17 | 14 |           |           |           |            |       |            |           |       |          |     |     |       |           |          |                                      |

|                     |    |           |           |           |            |       |            |           |        |           |     |     |       |         |          |                                      |
|---------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|--------|-----------|-----|-----|-------|---------|----------|--------------------------------------|
| ENSG00000179580.9   | 16 | 1966822   | 1966823   | 0.116276  | rs2064289  | -4.39 | rs763152   | 0.0146    | 3.18   | -2.403    | 438 | 438 | susie | -4.2513 | 2.13E-05 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000183751.14  | 16 | 1972036   | 1972037   | -0.027091 | rs2064289  | -4.4  | rs1133099  | 0.00234   | -2.6   | -2.63192  | 435 | 1   | top1  | 2.6319  | 0.00849  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000183971.6   | 16 | 2009925   | 2009926   | 0.012426  | rs8058190  | -4.4  | rs2235642  | -0.00641  | -2.8   | -2.209    | 408 | 1   | lasso | 2.209   | 0.0272   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000065054.13  | 16 | 2025355   | 2025356   | 0.168806  | rs2667684  | -4.32 | rs34123233 | 0.0855    | -4.39  | 2.308     | 396 | 396 | susie | -2.5057 | 0.0122   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000167964.12  | 16 | 2140802   | 2140803   | 0.08438   | rs8058190  | 4.35  | rs36232    | 0.081     | 4.2    | 2.765     | 357 | 1   | top1  | 2.765   | 0.00569  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000263429.3   | 17 | 10804098  | 10804099  | 0.045549  | rs6503345  | -3.34 | rs1468484  | 0.003773  | 3.1    | -2.648    | 479 | 479 | susie | -3.1389 | 0.0017   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000167543.15  | 17 | 29566051  | 29566052  | -0.026562 | rs877492   | -2.58 | rs8076604  | 0.020941  | -1.8   | -2.57536  | 314 | 1   | top1  | 2.5754  | 0.01001  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000108306.11  | 17 | 39402522  | 39402523  | -0.001824 | rs4252607  | 2.49  | rs16530    | 0.086369  | -2.08  | -2.07677  | 330 | 1   | top1  | 2.0768  | 0.03782  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000265971.1   | 17 | 63454992  | 63454993  | 0.097382  | rs16946721 | -3.2  | rs2955245  | 0.007875  | -3.09  | 2.02487   | 256 | 1   | top1  | -2.0249 | 0.04288  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000173826.14  | 17 | 63523333  | 63523334  | 0.028803  | rs16946721 | 2.75  | rs9890263  | -0.003227 | -3.02  | 2.29103   | 269 | 1   | top1  | -2.291  | 0.02196  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG000000087191.12 | 17 | 63827671  | 63827672  | 0.157452  | rs4465659  | 2.41  | rs2137143  | 0.004055  | -3.14  | -1.605    | 322 | 322 | susie | 2.0882  | 0.03678  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000240280.6   | 17 | 63849291  | 63849292  | 0.408098  | rs4465659  | 2.41  | rs9944483  | 0.328136  | -7.28  | 2.008     | 323 | 1   | top1  | -2.008  | 0.04464  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000256525.6   | 17 | 64497035  | 64497036  | -0.044063 | rs11079531 | -2.36 | rs17562856 | 0.015178  | -3.17  | -2.10414  | 188 | 2   | lasso | 2.1041  | 0.03537  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000267708.1   | 17 | 68159042  | 68159043  | -0.042948 | rs8080714  | -4.89 | rs11869470 | 0.017154  | 3      | 2.883     | 318 | 1   | lasso | 2.883   | 0.00394  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000267746.1   | 18 | 34222964  | 34222965  | 0.005144  | rs12607558 | 3.15  | rs9965596  | -0.00642  | -2.64  | -1.041    | 309 | 309 | susie | 2.3271  | 0.02     | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000268516.2   | 19 | 58278807  | 58278808  | 0.295039  | rs260461   | 3.51  | rs260452   | 0.180172  | 5.39   | -2.348    | 348 | 1   | top1  | -2.348  | 0.0189   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000182318.5   | 19 | 58327018  | 58327019  | 0.22233   | rs260461   | 3.53  | rs16988659 | 0.04882   | 4.3    | 2.025     | 332 | 332 | susie | 2.07    | 0.0384   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000119778.14  | 2  | 23927113  | 23927114  | 0.315873  | rs1991083  | -3.28 | rs2551337  | 0.148     | 5.37   | -2.5489   | 376 | 1   | top1  | -2.5489 | 0.010807 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000205639.9   | 2  | 24010080  | 24010081  | 0.011389  | rs1991083  | -3.38 | rs1991083  | -0.00591  | 2.71   | -3.3762   | 350 | 1   | lasso | -3.3762 | 0.000735 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000119782.13  | 2  | 24049700  | 24049701  | 0.069608  | rs1991083  | -3.42 | rs11680810 | -0.00642  | 2.71   | 2.5453    | 330 | 330 | susie | 2.0292  | 0.042434 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000270820.5   | 2  | 61471187  | 61471188  | 0.053411  | rs778755   | 3.69  | rs12613627 | -0.00562  | 2.98   | -2.122    | 299 | 14  | enet  | -2.7631 | 0.005726 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000163586.9   | 2  | 88128115  | 88128116  | 0.117849  | rs6712707  | -2.94 | rs2919872  | 0.0856    | -4.53  | 1.6214    | 256 | 12  | enet  | -2.2792 | 0.022655 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000153574.8   | 2  | 88691643  | 88691644  | 0.120564  | rs6712707  | -2.94 | rs2012201  | 0.000415  | 2.28   | 2.294     | 199 | 199 | susie | 1.9835  | 0.047313 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000178162.8   | 2  | 130428175 | 130428176 | -0.001735 | rs6721186  | 2.5   | rs6705546  | -0.00619  | -2.44  | -2.019    | 126 | 1   | lasso | 2.019   | 0.043487 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000232320.6   | 2  | 161341325 | 161341326 | -0.027439 | rs13413741 | -3.03 | rs1516100  | -0.00643  | -3.04  | -2.5536   | 377 | 1   | enet  | 2.5536  | 0.010662 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000101460.12  | 20 | 34546853  | 34546854  | 0.31537   | rs12624640 | 3.2   | rs6087577  | 0.238033  | 6.64   | 2.692     | 303 | 303 | susie | 2.8318  | 0.00463  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000159131.16  | 21 | 33543490  | 33543491  | 0.093018  | rs2298678  | 3.44  | rs2834242  | 0.007899  | -3.03  | 2.137     | 447 | 1   | top1  | -2.1371 | 0.03259  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000272948.2   | 21 | 37267919  | 37267920  | 0.051335  | rs11088397 | 4.7   | rs2835749  | -0.001034 | -2.96  | -2.819    | 460 | 1   | top1  | 2.819   | 0.00482  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000157542.9   | 21 | 37916445  | 37916446  | 0.44056   | rs2835771  | 4.71  | rs2835896  | 0.156323  | -6     | -2.255    | 534 | 534 | susie | 2.1334  | 0.03289  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000272886.5   | 3  | 53347609  | 53347610  | -0.00657  | rs611914   | -3.36 | rs9880156  | 0.002079  | -2.94  | 2.6996    | 405 | 1   | top1  | -2.6996 | 0.00694  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000239519.1   | 3  | 86028006  | 86028007  | 0.448599  | rs6549078  | -3.52 | rs13082138 | 0.335952  | 7.55   | 1.9138    | 312 | 11  | enet  | 2.2634  | 0.02361  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000178694.9   | 3  | 94063811  | 94063812  | 0.053902  | rs12631264 | 2.33  | rs12631264 | 0.036076  | 3.21   | 2.3347    | 196 | 1   | top1  | 2.3347  | 0.01956  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000223930.5   | 3  | 178385416 | 178385417 | 0.063803  | rs4568149  | -3.08 | rs9846680  | -0.006229 | 2.87   | 0.783     | 382 | 382 | susie | 2.4378  | 0.01478  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000177752.14  | 4  | 44678425  | 44678426  | 0.156127  | rs10517102 | 3.56  | rs17600797 | 0.145988  | 5.07   | -2.6376   | 372 | 1   | top1  | -2.6376 | 0.00835  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000163281.11  | 4  | 44726594  | 44726595  | 0.417049  | rs10517102 | 3.33  | rs12499960 | 0.167711  | 5.76   | -2.429    | 375 | 375 | susie | -2.5085 | 0.0121   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000163288.13  | 4  | 47031359  | 47031360  | 0.04605   | rs4235151  | 2.75  | rs4235151  | 0.011615  | 3.49   | 2.751     | 338 | 4   | enet  | 2.9772  | 0.00291  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000163743.13  | 4  | 75514216  | 75514217  | 0.049996  | rs17220803 | -4.39 | rs2126852  | 0.024942  | 3.61   | -2.13     | 426 | 1   | top1  | -2.13   | 0.0332   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000138769.10  | 4  | 75630715  | 75630716  | 0.195631  | rs17220803 | -3.86 | rs6852678  | 0.092666  | 5.09   | 1.7808    | 441 | 441 | susie | 2.4009  | 0.0164   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000138757.14  | 4  | 75724524  | 75724525  | 0.179113  | rs7685696  | 5.65  | rs7679851  | 0.038595  | -3.86  | 2.9453    | 459 | 1   | top1  | -2.9453 | 0.00323  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000156194.17  | 4  | 75902570  | 75902571  | 0.364673  | rs17236661 | -5.83 | rs10518142 | 0.082206  | -5.23  | -0.6593   | 446 | 24  | enet  | 2.0807  | 0.0375   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000198301.11  | 4  | 75990961  | 75990962  | -0.000976 | rs17236661 | -5.83 | rs10000169 | -0.004587 | 2.78   | 2.4125    | 461 | 1   | lasso | 2.4125  | 0.0158   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000138755.5   | 4  | 76007487  | 76007488  | 0.067176  | rs17236661 | -5.83 | rs4859425  | 0.013177  | 3.29   | 2.769     | 469 | 1   | top1  | 2.769   | 0.00562  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000189157.13  | 4  | 76214039  | 76214040  | 0.54694   | rs17236661 | -5.83 | rs1876539  | 0.352396  | -7.68  | 4.5102    | 482 | 482 | susie | -4.4041 | 1.06E-05 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000138760.9   | 4  | 76234535  | 76234536  | 0.012472  | rs17236661 | -5.83 | rs9996493  | -0.003035 | 3.05   | -0.324    | 485 | 485 | susie | 4.0582  | 4.94E-05 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000164099.3   | 4  | 118353002 | 118353003 | 0.180606  | rs4834642  | 3.13  | rs6850687  | 0.103103  | 4.72   | 1.9683    | 262 | 1   | top1  | 1.9683  | 0.049    | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000248213.3   | 4  | 118638781 | 118638782 | -0.053388 | rs10014208 | 3.09  | rs3775836  | 0.001353  | -2.26  | 2.515     | 345 | 1   | top1  | -2.515  | 0.0119   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000164163.10  | 4  | 145098216 | 145098217 | -0.028601 | rs2883154  | 2.71  | rs11931253 | -0.005055 | 2.83   | 1.9186    | 249 | 15  | enet  | 2.2024  | 0.0276   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000164176.12  | 5  | 84384792  | 84384793  | 0.164519  | rs10056152 | 2.75  | rs10077624 | -0.00633  | 3.05   | -2.0326   | 334 | 2   | lasso | -2.0463 | 0.0407   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000234292.3   | 5  | 91281141  | 91281142  | 0.009298  | rs4458614  | -2.87 | rs10074525 | -0.000515 | 2.69   | 2.4703    | 318 | 1   | top1  | 2.4703  | 0.0135   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000250958.1   | 5  | 102581367 | 102581368 | 0.100779  | rs17154942 | -3.46 | rs17154889 | 0.0118    | 3.32   | -3.0678   | 297 | 297 | susie | -2.2168 | 0.0266   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000145730.20  | 5  | 102753980 | 102753981 | 0.452789  | rs17154942 | -3.46 | rs1039623  | 0.396     | 8.39   | -2.192    | 299 | 299 | susie | -2.2641 | 0.0236   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000248648.1   | 5  | 133003118 | 133003119 | 0.097959  | rs166112   | -3.38 | rs10491278 | 0.0203    | -3.58  | -2.002    | 393 | 1   | top1  | 2.002   | 0.0453   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG0000010017.12   | 6  | 13711563  | 13711564  | 0.005972  | rs9396115  | -3.3  | rs4715568  | -0.002542 | -3.25  | -2.718196 | 529 | 1   | lasso | 2.7182  | 0.00656  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000232295.7   | 6  | 17328227  | 17328228  | 0.016015  | rs9442714  | 4.78  | rs7766995  | -0.00633  | 3.32   | 1.976     | 469 | 1   | lasso | 1.976   | 0.0482   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000164411.11  | 6  | 87329277  | 87329278  | 0.012633  | rs7739124  | 2.94  | rs2208166  | 0.007434  | 2.79   | 2.022     | 406 | 1   | lasso | 2.022   | 0.0432   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000111875.7   | 6  | 118894356 | 118894357 | 0.117291  | rs6932585  | -3.98 | rs6929403  | 0.051305  | -3.87  | 2.847897  | 382 | 1   | top1  | -2.8479 | 0.0044   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000111877.17  | 6  | 118935161 | 118935162 | 0.139944  | rs6932585  | -3.98 | rs6932585  | 0.139715  | 5.14   | -3.978    | 380 | 1   | top1  | -3.978  | 6.95E-05 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000204789.4   | 6  | 27360220  | 27360221  | 0.315351  | rs6918131  | -4.23 | rs6938943  | 0.174775  | 5.477  | -2.9764   | 386 | 1   | top1  | -2.9764 | 0.00292  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000124613.8   | 6  | 27374614  | 27374615  | 0.494856  | rs6918131  | -4.23 | rs6920362  | 0.624928  | -9.89  | -4.114    | 393 | 18  | lasso | 4.1149  | 3.87E-05 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000271755.1   | 6  | 27406963  | 27406964  | 0.118184  | rs6918131  | 2.406 | rs6918131  | 0.102019  | -4.961 | -4.2279   | 406 | 406 | susie | 4.1185  | 3.81E-05 | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000106133.17  | 7  | 72954789  | 72954790  | 0.251586  | rs17339199 | -2.78 | rs7729224  | 0.077215  | 5.05   | -1.2873   | 94  | 17  | enet  | -2.0445 | 0.0409   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000164647.8   | 7  | 90154374  | 90154375  | -0.014058 | rs4512312  | -3.5  | rs17863052 | -0.006449 | -3.06  | -2.7825   | 484 | 3   | enet  | 2.8763  | 0.00402  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG00000238324.1   | 7  | 102857449 | 102857450 | -0.006495 | rs3948710  | 3.49  | rs7780405  | 0.008983  | -1.69  | 2.466     | 169 | 1   | top1  | -2.466  | 0.01366  | Brain_Cerebellar_Hemisphere.nofilter |

|                     |    |           |           |           |            |       |            |           |       |           |     |     |       |          |          |                                      |
|---------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|-------|-----------|-----|-----|-------|----------|----------|--------------------------------------|
| ENSG000000261447.1  | 9  | 69672748  | 69672749  | -0.015013 | rs10511972 | -3.02 | rs1339546  | 0.029298  | 2.2   | 2.523967  | 495 | 1   | top1  | 2.524    | 0.0116   | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG000000119457.7  | 9  | 112890912 | 112890913 | 0.615633  | rs786990   | -3.41 | rs4978508  | 0.305083  | -7.01 | -3.144853 | 532 | 10  | lasso | 2.9844   | 0.00284  | Brain_Cerebellar_Hemisphere.nofilter |
| ENSG000000186501.14 | 1  | 27322144  | 27322145  | -0.022407 | rs1997757  | 2.33  | rs1997757  | 0.00705   | 3.42  | 2.33      | 235 | 4   | lasso | 2.3398   | 0.0193   | Brain_Cerebellum.nofilter            |
| ENSG000000150337.13 | 1  | 149782670 | 149782671 | 0.032014  | rs7521768  | -2.14 | rs1964542  | -0.00382  | -2.36 | -1.9114   | 98  | 98  | susie | 2.0328   | 0.0421   | Brain_Cerebellum.nofilter            |
| ENSG000000276997.4  | 1  | 222504621 | 222504622 | 0.009375  | rs6683180  | -3.1  | rs2800860  | -0.00491  | -2.8  | 2.4765    | 347 | 1   | lasso | -2.4765  | 0.0133   | Brain_Cerebellum.nofilter            |
| ENSG000000143702.15 | 1  | 243255347 | 243255348 | 0.029531  | rs10927035 | 4.3   | rs2171975  | 0.00043   | 3.01  | 2.324     | 286 | 1   | top1  | 2.324    | 0.0201   | Brain_Cerebellum.nofilter            |
| ENSG000000236031.1  | 1  | 243545597 | 243545598 | 0.001201  | rs10927035 | 4.34  | rs1121276  | 0.0357    | 3.02  | 2.05      | 300 | 1   | top1  | 2.05     | 0.0404   | Brain_Cerebellum.nofilter            |
| ENSG000000215146.4  | 10 | 42367973  | 42367974  | 0.536706  | rs209385   | 3.09  | rs2505822  | 0.573913  | 10.38 | 2.5182    | 183 | 1   | top1  | 2.5182   | 0.0118   | Brain_Cerebellum.nofilter            |
| ENSG000000226200.6  | 10 | 50624986  | 50624987  | 0.116402  | rs2339624  | 3.36  | rs12358192 | 0.055639  | -4.44 | -2.4289   | 405 | 3   | lasso | 2.5237   | 0.01161  | Brain_Cerebellum.nofilter            |
| ENSG000000232706.3  | 10 | 50676742  | 50676743  | 0.142742  | rs2339624  | 3.35  | rs9415721  | 0.009646  | 3.5   | 0.968     | 428 | 44  | enet  | 2.7282   | 0.00637  | Brain_Cerebellum.nofilter            |
| ENSG000000107745.17 | 10 | 72626190  | 72626191  | 0.048317  | rs11815867 | 2.47  | rs7082882  | 0.024774  | 3.45  | 2.3573    | 257 | 1   | top1  | 2.3573   | 0.01841  | Brain_Cerebellum.nofilter            |
| ENSG000000156026.14 | 10 | 72692130  | 72692131  | 0.273785  | rs11815867 | 2.47  | rs3009546  | 0.412119  | 8.91  | 2.072     | 265 | 1   | top1  | 2.072    | 0.03827  | Brain_Cerebellum.nofilter            |
| ENSG000000138315.12 | 10 | 72893580  | 72893581  | 0.152417  | rs11815867 | 2.47  | rs6415912  | 0.133698  | 5.22  | 2.004     | 248 | 1   | top1  | 2.004    | 0.04507  | Brain_Cerebellum.nofilter            |
| ENSG000000173208.3  | 12 | 39619750  | 39619751  | 0.006546  | rs11174631 | 6.08  | rs6581439  | -0.005356 | 2.75  | 3.309     | 339 | 339 | susie | 2.4416   | 0.014621 | Brain_Cerebellum.nofilter            |
| ENSG000000273015.2  | 12 | 45727774  | 45727775  | 0.022242  | rs7134559  | -4.57 | rs10880868 | -0.004577 | -2.95 | -3.5753   | 380 | 2   | lasso | 3.5746   | 0.000351 | Brain_Cerebellum.nofilter            |
| ENSG000000189079.15 | 12 | 45729664  | 45729665  | 0.085693  | rs7134559  | -4.57 | rs3815661  | 0.036698  | 3.47  | 2.3801    | 380 | 1   | top1  | 2.3801   | 0.017306 | Brain_Cerebellum.nofilter            |
| ENSG000000257194.2  | 12 | 90107738  | 90107739  | 0.046815  | rs10777221 | 2.79  | rs10777211 | -0.005355 | -2.87 | 2.1155    | 335 | 1   | lasso | -2.1155  | 0.034385 | Brain_Cerebellum.nofilter            |
| ENSG000000165621.8  | 13 | 96994729  | 96994730  | 0.067338  | rs4771267  | 3.7   | rs4771979  | 0.016785  | 3.83  | 2.731     | 355 | 4   | lasso | 2.694    | 0.00706  | Brain_Cerebellum.nofilter            |
| ENSG000000043355.11 | 13 | 99981771  | 99981772  | 0.073966  | rs1107450  | 2.48  | rs4771358  | 0.013867  | -3.53 | 2.071     | 418 | 4   | lasso | -2.164   | 0.03047  | Brain_Cerebellum.nofilter            |
| ENSG000000165502.6  | 14 | 49620684  | 49620685  | 0.568064  | rs8021453  | 2.85  | rs2985697  | 0.495965  | -9.92 | 2.17      | 381 | 381 | susie | -2.085   | 0.03703  | Brain_Cerebellum.nofilter            |
| ENSG000000100614.17 | 14 | 60245751  | 60245752  | 0.219195  | rs10151922 | 2.71  | rs10151922 | 0.175839  | 6.16  | 2.71106   | 282 | 282 | susie | 2.746    | 0.00604  | Brain_Cerebellum.nofilter            |
| ENSG000000261242.1  | 14 | 63543568  | 63543569  | 0.158028  | rs10139597 | -3.38 | rs8003274  | 0.05096   | -4.03 | 2.00446   | 366 | 1   | top1  | 2.004    | 0.04502  | Brain_Cerebellum.nofilter            |
| ENSG000000200693.2  | 14 | 63651498  | 63651499  | 0.027179  | rs10139597 | -3.38 | rs41491846 | -0.004644 | -2.84 | -2.951    | 381 | 381 | susie | 2.211    | 0.02704  | Brain_Cerebellum.nofilter            |
| ENSG000000261207.1  | 16 | 1752261   | 1752262   | 0.015617  | rs2667684  | -4.32 | rs8047180  | 0.022164  | 3.53  | -1.986    | 461 | 1   | lasso | -1.986   | 0.047033 | Brain_Cerebellum.nofilter            |
| ENSG000000103024.7  | 16 | 1771729   | 1771730   | 0.054937  | rs2064289  | -4.33 | rs2575329  | 0.019253  | 3.5   | -3.023    | 463 | 1   | top1  | -3.023   | 0.002503 | Brain_Cerebellum.nofilter            |
| ENSG000000162039.14 | 16 | 1872177   | 1872178   | 0.110452  | rs2064289  | -4.36 | rs1742472  | 0.048887  | -3.9  | -3.695    | 447 | 1   | top1  | 3.695    | 0.00022  | Brain_Cerebellum.nofilter            |
| ENSG000000140986.7  | 16 | 1957605   | 1957606   | -0.042671 | rs2064289  | -4.39 | rs13331553 | -0.004243 | -2.93 | -2.379    | 440 | 1   | top1  | 2.379    | 0.01736  | Brain_Cerebellum.nofilter            |
| ENSG000000140990.14 | 16 | 1959507   | 1959508   | 0.332321  | rs2064289  | -4.39 | rs2815301  | 0.14611   | -5.42 | 2.4872    | 439 | 1   | top1  | -2.4872  | 0.012874 | Brain_Cerebellum.nofilter            |
| ENSG000000255513.1  | 16 | 1964094   | 1964095   | 0.830092  | rs2064289  | -4.39 | rs338791   | 0.414764  | 9.47  | -3.1267   | 439 | 439 | susie | -3.1903  | 0.001421 | Brain_Cerebellum.nofilter            |
| ENSG000000179580.9  | 16 | 1966822   | 1966823   | -0.036013 | rs2064289  | -4.39 | rs338791   | 0.074032  | 4.13  | -3.1267   | 437 | 1   | top1  | -3.1267  | 0.001768 | Brain_Cerebellum.nofilter            |
| ENSG000000127554.12 | 16 | 1984206   | 1984207   | 0.162145  | rs8058190  | 4.38  | rs8053843  | 0.001919  | 3.5   | -3.723    | 428 | 1   | top1  | -3.723   | 0.000197 | Brain_Cerebellum.nofilter            |
| ENSG000000167962.13 | 16 | 2009822   | 2009823   | -0.032646 | rs8058190  | 4.4   | rs13332377 | 0.006694  | -2.29 | 3.1915    | 408 | 1   | top1  | -3.1915  | 0.001416 | Brain_Cerebellum.nofilter            |
| ENSG000000006505.7  | 16 | 2047463   | 2047464   | 0.02652   | rs2667684  | -4.32 | rs3743511  | 0.021081  | -3.23 | -3.043    | 384 | 1   | top1  | 3.043    | 0.002342 | Brain_Cerebellum.nofilter            |
| ENSG000000260447.1  | 16 | 2119206   | 2119207   | 0.074307  | rs8055439  | -4.29 | rs2294619  | -0.003526 | 2.88  | -3.182    | 363 | 1   | lasso | -3.182   | 0.001463 | Brain_Cerebellum.nofilter            |
| ENSG000000276523.1  | 16 | 75572684  | 75572685  | 0.065377  | rs174000   | -3.12 | rs6564270  | 0.001776  | 3.37  | 0.466     | 385 | 8   | enet  | 1.9893   | 0.046673 | Brain_Cerebellum.nofilter            |
| ENSG000000263429.3  | 17 | 10804098  | 10804099  | -0.018121 | rs6503345  | -3.34 | rs7210183  | -0.00501  | -2.42 | -2.1379   | 481 | 1   | top1  | 2.1379   | 0.0325   | Brain_Cerebellum.nofilter            |
| ENSG000000168792.4  | 17 | 29567136  | 29567137  | 0.292334  | rs877492   | -2.58 | rs656977   | 0.0644    | 4.96  | 2.11      | 314 | 314 | susie | 2.3971   | 0.0165   | Brain_Cerebellum.nofilter            |
| ENSG000000243234.1  | 19 | 57953758  | 57953759  | -0.075492 | rs260445   | 3.49  | rs157360   | 0.02055   | 2.11  | -2.501    | 467 | 1   | top1  | -2.5011  | 0.01238  | Brain_Cerebellum.nofilter            |
| ENSG000000268201.1  | 19 | 58266634  | 58266635  | 0.070378  | rs260461   | 3.5   | rs260452   | 0.08019   | 4.23  | -2.348    | 352 | 1   | top1  | -2.348   | 0.01887  | Brain_Cerebellum.nofilter            |
| ENSG000000268516.2  | 19 | 58278807  | 58278808  | 0.275245  | rs260461   | 3.51  | rs260452   | 0.21944   | 6.52  | -2.348    | 348 | 1   | top1  | -2.348   | 0.01887  | Brain_Cerebellum.nofilter            |
| ENSG000000278129.1  | 19 | 58278950  | 58278951  | 0.457308  | rs260461   | 3.51  | rs260503   | 0.1553    | 6.29  | -0.792    | 348 | 43  | enet  | -2.5867  | 0.00969  | Brain_Cerebellum.nofilter            |
| ENSG000000119778.14 | 2  | 23927113  | 23927114  | 0.09721   | rs1991083  | -3.28 | rs2712056  | 0.057991  | 4.33  | -2.65427  | 378 | 378 | susie | -2.65593 | 0.00791  | Brain_Cerebellum.nofilter            |
| ENSG000000115128.6  | 2  | 24076442  | 24076443  | 0.006071  | rs1991083  | -3.34 | rs2303287  | -0.005007 | 2.7   | -2.02529  | 317 | 3   | enet  | -2.02529 | 0.04284  | Brain_Cerebellum.nofilter            |
| ENSG000000212978.6  | 2  | 61144968  | 61144969  | 0.037359  | rs778755   | 3.63  | rs7608910  | -0.002865 | -3.2  | -2.661    | 314 | 314 | susie | 2.30464  | 0.02119  | Brain_Cerebellum.nofilter            |
| ENSG000000273302.1  | 2  | 61199978  | 61199979  | 0.229758  | rs778755   | 3.65  | rs6737373  | 0.16284   | -6.36 | 1.209     | 303 | 27  | enet  | -2.12709 | 0.03341  | Brain_Cerebellum.nofilter            |
| ENSG000000270820.5  | 2  | 61471187  | 61471188  | 0.099828  | rs778755   | 3.69  | rs13004371 | 0.033676  | 4.06  | -1.521    | 299 | 299 | susie | -3.11774 | 0.00182  | Brain_Cerebellum.nofilter            |
| ENSG000000082898.16 | 2  | 61538625  | 61538626  | 0.055506  | rs778755   | 3.68  | rs6545895  | -0.002724 | 3.71  | -2.16078  | 292 | 9   | lasso | -2.93324 | 0.00335  | Brain_Cerebellum.nofilter            |
| ENSG000000172016.15 | 2  | 79159752  | 79159753  | 0.036776  | rs1864548  | 2.92  | rs2117728  | 0.012489  | -2.55 | 2.33761   | 587 | 1   | top1  | -2.33761 | 0.01941  | Brain_Cerebellum.nofilter            |
| ENSG000000240253.5  | 2  | 130690132 | 130690133 | 0.061206  | rs6721186  | 2.57  | rs6750645  | -0.003102 | -2.45 | 0.349     | 171 | 171 | susie | -2.34782 | 0.01888  | Brain_Cerebellum.nofilter            |
| ENSG000000115947.13 | 2  | 148020762 | 148020763 | 0.085325  | rs1234404  | -3.6  | rs17218798 | 0.040968  | -4.54 | -0.85247  | 328 | 4   | lasso | 2.62462  | 0.00867  | Brain_Cerebellum.nofilter            |
| ENSG000000196141.13 | 2  | 200305880 | 200305881 | 0.032975  | rs7565480  | 3.38  | rs281787   | 0.003481  | -3.04 | 3.185     | 509 | 1   | top1  | -3.185   | 0.00145  | Brain_Cerebellum.nofilter            |
| ENSG000000163596.16 | 2  | 202871984 | 202871985 | -0.00228  | rs4675317  | -2.96 | rs17386813 | 0.026223  | -3.57 | -2.336    | 242 | 1   | top1  | 2.336    | 0.01949  | Brain_Cerebellum.nofilter            |
| ENSG000000125971.16 | 20 | 34516408  | 34516409  | 0.103327  | rs12624640 | 3.21  | rs6059968  | 0.004051  | 2.9   | -0.263    | 299 | 13  | enet  | 1.972    | 0.04863  | Brain_Cerebellum.nofilter            |
| ENSG000000101460.12 | 20 | 34546853  | 34546854  | 0.50852   | rs12624640 | 3.2   | rs6059956  | 0.409569  | 8.86  | 2.829     | 303 | 303 | susie | 2.599    | 0.00935  | Brain_Cerebellum.nofilter            |
| ENSG000000101464.10 | 20 | 34677084  | 34677085  | 0.095471  | rs12624640 | 3.22  | rs17092148 | -0.00185  | 2.89  | -2.502    | 318 | 318 | susie | -2.634   | 0.00844  | Brain_Cerebellum.nofilter            |
| ENSG000000280003.1  | 3  | 52219011  | 52219012  | 0.058411  | rs6774097  | 2.84  | rs13089892 | 0.00481   | -3.39 | 1.7975    | 326 | 11  | enet  | -3.3763  | 0.000735 | Brain_Cerebellum.nofilter            |
| ENSG000000168237.17 | 3  | 52287088  | 52287089  | 0.201891  | rs6774097  | 2.83  | rs11717383 | 0.217     | 6.6   | -2.5841   | 336 | 336 | susie | -2.5982  | 0.009372 | Brain_Cerebellum.nofilter            |
| ENSG000000168268.10 | 3  | 52535053  | 52535054  | -0.006213 | rs6774097  | 2.83  | rs2952830  | 0.0234    | 2.23  | -2.4407   | 369 | 1   | top1  | -2.4407  | 0.01466  | Brain_Cerebellum.nofilter            |
| ENSG000000163635.17 | 3  | 63864556  | 63864557  | 0.021529  | rs13068250 | 3.38  | rs9831472  | -0.00495  | 3.16  | -0.931    | 602 | 602 | susie | 2.0635   | 0.039062 | Brain_Cerebellum.nofilter            |
| ENSG000000239519.1  | 3  | 86028006  | 86028007  | 0.384734  | rs6549078  | -3.52 | rs12486982 | 0.305     | 7.6   | 2.06      | 313 | 1   | top1  | 2.06     | 0.039399 | Brain_Cerebellum.nofilter            |
| ENSG000000080200.9  | 3  | 97822039  | 97822040  | 0.019375  | rs6795627  | -2.47 | rs4857282  | 0.0613    | 3.53  | 1.972     | 328 | 1   | top1  | 1.972    | 0.04861  | Brain_Cerebellum.nofilter            |
| ENSG000000261758.1  | 3  | 136752629 | 136752630 | 0.36234   | rs6780453  | -2.47 | rs4521165  | -0.00537  | 2.97  | 2.08      | 339 | 5   | lasso | 2.2471   | 0.024636 | Brain_Cerebellum.nofilter            |
| ENSG000000169255.13 | 3  | 161105383 | 161105384 | 0.238476  | rs16832129 | -2.88 | rs17421926 | -0.00039  | -3.2  | -2.213    | 359 | 57  | enet  | 2.4753   | 0.013312 | Brain_Cerebellum.nofilter            |
| ENSG000000114200.9  | 3  | 165837471 | 165837472 | 0.108687  | rs16850013 | -2.87 | rs822718   | 0.0758    | 4.05  |           |     |     |       |          |          |                                      |

|                    |    |           |           |           |            |       |            |           |        |         |     |     |       |           |          |                           |
|--------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|--------|---------|-----|-----|-------|-----------|----------|---------------------------|
| ENSG00000189157.13 | 4  | 76214039  | 76214040  | 0.554321  | rs17236661 | -5.83 | rs1441914  | 0.431     | -9.16  | 4.433   | 481 | 37  | enet  | -2.9811   | 0.002873 | Brain_Cerebellum.nofilter |
| ENSG00000138760.9  | 4  | 76234535  | 76234536  | 0.145442  | rs17236661 | -5.83 | rs4859648  | 0.00699   | 3.82   | 3.589   | 484 | 15  | enet  | 3.4441    | 0.000573 | Brain_Cerebellum.nofilter |
| ENSG00000249239.2  | 4  | 92822917  | 92822918  | -0.004427 | rs13105522 | -2.25 | rs11097359 | -0.00418  | 2.59   | -2.006  | 264 | 1   | top1  | -2.006    | 0.044856 | Brain_Cerebellum.nofilter |
| ENSG00000281731.2  | 4  | 118685340 | 118685341 | 0.039206  | rs4834755  | 3.12  | rs3775836  | 0.0223    | 3.53   | 2.515   | 347 | 2   | lasso | 2.4728    | 0.013405 | Brain_Cerebellum.nofilter |
| ENSG00000250958.1  | 5  | 102581367 | 102581368 | 0.150151  | rs17154942 | -3.46 | rs258144   | 0.007995  | 3.81   | -1.4396 | 302 | 18  | enet  | -2.49603  | 0.01256  | Brain_Cerebellum.nofilter |
| ENSG00000145730.20 | 5  | 102753980 | 102753981 | 0.279916  | rs17154942 | -3.46 | rs2657433  | 0.279943  | 7.25   | -1.909  | 304 | 7   | lasso | -2.07895  | 0.03762  | Brain_Cerebellum.nofilter |
| ENSG00000175749.11 | 5  | 103032375 | 103032376 | 0.322522  | rs2288788  | -3.7  | rs26434    | 0.394727  | 8.65   | -3.0846 | 307 | 1   | top1  | -3.08459  | 0.00204  | Brain_Cerebellum.nofilter |
| ENSG00000184609.9  | 5  | 160421710 | 160421711 | 0.327127  | rs10052694 | -3.54 | rs17057781 | 0.058808  | 4.69   | 1.247   | 464 | 33  | enet  | 2.00047   | 0.04545  | Brain_Cerebellum.nofilter |
| ENSG00000232295.7  | 6  | 71328227  | 71328228  | 0.035845  | rs9442714  | 4.78  | rs828655   | 0.01521   | -3.32  | -2.043  | 469 | 1   | top1  | 2.0429    | 0.04107  | Brain_Cerebellum.nofilter |
| ENSG00000130347.12 | 6  | 106629486 | 106629487 | 0.03096   | rs9373836  | -3.4  | rs17586975 | -0.005355 | -3.21  | 1.54    | 506 | 4   | lasso | -2.1299   | 0.03318  | Brain_Cerebellum.nofilter |
| ENSG00000111875.7  | 6  | 118894356 | 118894357 | 0.116348  | rs6932585  | -3.98 | rs9489520  | 0.079565  | -4.23  | 3.185   | 386 | 1   | top1  | -3.185    | 0.00145  | Brain_Cerebellum.nofilter |
| ENSG00000124613.8  | 6  | 27374614  | 27374615  | 0.376807  | rs6918131  | -4.23 | rs6920362  | 0.41723   | -8.873 | -4.114  | 393 | 1   | top1  | 4.114     | 3.89E-05 | Brain_Cerebellum.nofilter |
| ENSG00000271755.1  | 6  | 27406963  | 27406964  | 0.094916  | rs6918131  | -4.23 | rs6918131  | 0.08095   | -4.655 | -4.2279 | 406 | 406 | susie | 3.985643  | 6.73E-05 | Brain_Cerebellum.nofilter |
| ENSG00000281706.2  | 6  | 27694034  | 27694035  | 0.011353  | rs6918131  | -4.28 | rs9295749  | -0.00086  | -2.728 | 2.3003  | 481 | 3   | enet  | -2.544732 | 0.0109   | Brain_Cerebellum.nofilter |
| ENSG00000197935.6  | 6  | 29005259  | 29005260  | -0.012155 | rs4713216  | 2.37  | rs4713216  | 0.03204   | 0.388  | 2.37    | 3   | 1   | top1  | 2.37      | 0.0178   | Brain_Cerebellum.nofilter |
| ENSG00000169902.13 | 7  | 66205198  | 66205199  | 0.020414  | rs11766473 | 2.91  | rs11768292 | 0.022531  | 2.99   | 2.0356  | 216 | 1   | top1  | 2.0356    | 0.04179  | Brain_Cerebellum.nofilter |
| ENSG00000106133.17 | 7  | 72954789  | 72954790  | 0.442276  | rs17339199 | -2.78 | rs7792924  | 0.081164  | 5.17   | -1.2873 | 94  | 14  | enet  | -2.25503  | 0.02413  | Brain_Cerebellum.nofilter |
| ENSG00000186472.19 | 7  | 83162929  | 83162930  | 0.004004  | rs13229774 | 2.88  | rs7795945  | 0.036333  | 2.39   | 2.801   | 433 | 1   | top1  | 2.80097   | 0.00509  | Brain_Cerebellum.nofilter |
| ENSG00000127954.12 | 7  | 88306890  | 88306891  | -0.009693 | rs10487033 | 3.66  | rs17163558 | -0.005262 | 2.68   | 3.44    | 382 | 10  | enet  | 2.59177   | 0.00955  | Brain_Cerebellum.nofilter |
| ENSG00000128606.12 | 7  | 102912990 | 102912991 | -0.023926 | rs12540583 | 3.43  | rs7779121  | -0.004796 | -2.44  | 2.173   | 171 | 2   | lasso | -2.17327  | 0.02976  | Brain_Cerebellum.nofilter |
| ENSG00000225572.1  | 7  | 111808515 | 111808516 | 0.065388  | rs37667    | -3.33 | rs10235868 | 0.030668  | -3.69  | 2.8805  | 358 | 1   | top1  | -2.8805   | 0.00397  | Brain_Cerebellum.nofilter |
| ENSG00000234418.1  | 7  | 122216346 | 122216347 | 0.043538  | rs7785453  | 3.38  | rs2533862  | 0.026633  | 3.34   | -2.8343 | 332 | 1   | top1  | -2.83431  | 0.00459  | Brain_Cerebellum.nofilter |
| ENSG00000260398.1  | 8  | 78605951  | 78605952  | 0.279801  | rs16919538 | 3.73  | rs1062248  | 0.066445  | 5.02   | 2.796   | 328 | 10  | lasso | 3.1258    | 0.00177  | Brain_Cerebellum.nofilter |
| ENSG00000254231.1  | 8  | 86343313  | 86343314  | 0.073622  | rs49612116 | 3.2   | rs12544789 | 0.009121  | -3.43  | 3.055   | 404 | 1   | lasso | -3.055    | 0.00225  | Brain_Cerebellum.nofilter |
| ENSG00000164938.13 | 8  | 94949410  | 94949411  | 0.089191  | rs2055052  | 3.03  | rs16917429 | 0.013481  | -4.11  | 2.536   | 499 | 1   | top1  | -2.5364   | 0.0112   | Brain_Cerebellum.nofilter |
| ENSG00000104517.12 | 8  | 102412840 | 102412841 | 0.025743  | rs6935     | -3.07 | rs10955280 | 0.002118  | -3.05  | 2.402   | 483 | 1   | lasso | -2.4023   | 0.01629  | Brain_Cerebellum.nofilter |
| ENSG00000148057.15 | 9  | 83623048  | 83623049  | -0.052459 | rs7863524  | -2.93 | rs2811915  | -0.003503 | 3.08   | 2.1245  | 518 | 1   | top1  | 2.1245    | 0.033632 | Brain_Cerebellum.nofilter |
| ENSG00000271631.1  | 9  | 112885157 | 112885158 | 0.085349  | rs786990   | 9     | rs13802493 | -0.003171 | -4.09  | -3.1694 | 529 | 5   | enet  | 3.6309    | 0.000282 | Brain_Cerebellum.nofilter |
| ENSG00000119457.7  | 9  | 112890912 | 112890913 | 0.657451  | rs786990   | -3.41 | rs3802493  | 0.332747  | -8.46  | -3.1673 | 536 | 9   | lasso | 2.979     | 0.002892 | Brain_Cerebellum.nofilter |
| ENSG00000249087.6  | 1  | 23368996  | 23368997  | 0.104472  | rs17489856 | -2.35 | rs644749   | 0.03538   | -4.86  | -2.051  | 310 | 7   | lasso | 1.98008   | 0.0477   | Brain_Cortex.nofilter     |
| ENSG00000142765.17 | 1  | 27342019  | 27342020  | 0.082653  | rs1997757  | 2.29  | rs17162311 | -0.000974 | -3.06  | 1.771   | 232 | 232 | susie | -2.14987  | 0.0316   | Brain_Cortex.nofilter     |
| ENSG00000272419.6  | 1  | 145216057 | 145216058 | 0.051475  | rs12129861 | -2.45 | rs1298954  | 0.019275  | 3.13   | 2.251   | 8   | 8   | susie | 2.45782   | 0.014    | Brain_Cortex.nofilter     |
| ENSG00000234476.1  | 1  | 225465342 | 225465343 | -0.057639 | rs10753410 | 2.83  | rs3766934  | -0.005183 | -2.44  | 2.6228  | 407 | 3   | enet  | -1.97752  | 0.048    | Brain_Cortex.nofilter     |
| ENSG00000215146.4  | 10 | 42367973  | 42367974  | 0.483703  | rs209385   | 3.09  | rs2489684  | 0.459759  | 9.43   | 2.797   | 182 | 182 | susie | 2.35      | 0.0188   | Brain_Cortex.nofilter     |
| ENSG00000279863.1  | 10 | 50334537  | 50334538  | 0.008538  | rs4935738  | 3.27  | rs11006155 | 0.003208  | -2.72  | 1.968   | 304 | 4   | lasso | -2.5162   | 0.0119   | Brain_Cortex.nofilter     |
| ENSG00000226200.6  | 10 | 50624986  | 50624987  | 0.127999  | rs2339624  | 3.36  | rs17581567 | 0.038522  | -4.23  | -2.122  | 406 | 2   | lasso | 2.2188    | 0.0265   | Brain_Cortex.nofilter     |
| ENSG00000232706.3  | 10 | 50676742  | 50676743  | 0.044399  | rs2339624  | 3.35  | rs17581567 | -0.00045  | -3.17  | -2.099  | 429 | 1   | lasso | 2.0991    | 0.0358   | Brain_Cortex.nofilter     |
| ENSG00000119927.13 | 10 | 112215376 | 112215377 | 0.061995  | rs7907012  | -3.05 | rs3824627  | -0.001917 | -3.19  | -2.239  | 461 | 1   | lasso | 2.239     | 0.0252   | Brain_Cortex.nofilter     |
| ENSG00000135378.3  | 11 | 32829942  | 32829943  | -0.024849 | rs7107642  | 2.79  | rs7111865  | 0.009812  | -2.53  | 2.658   | 338 | 1   | top1  | -2.658    | 0.00786  | Brain_Cortex.nofilter     |
| ENSG00000110422.11 | 11 | 33256671  | 33256672  | 0.061599  | rs7107642  | 2.59  | rs3741020  | 0.020459  | -2.87  | 1.992   | 369 | 1   | top1  | -1.992    | 0.04637  | Brain_Cortex.nofilter     |
| ENSG00000189079.15 | 12 | 45729664  | 45729665  | 0.062278  | rs7134559  | -4.57 | rs11183312 | -0.001661 | 2.72   | 2.651   | 380 | 1   | lasso | 2.651     | 0.00803  | Brain_Cortex.nofilter     |
| ENSG00000066084.12 | 12 | 50505106  | 50505107  | 0.000899  | rs10783342 | 2.99  | rs7977742  | -0.000566 | 2.21   | 1.9513  | 296 | 296 | susie | 2.00498   | 0.04497  | Brain_Cortex.nofilter     |
| ENSG00000123268.8  | 12 | 50763709  | 50763710  | 0.046568  | rs11169567 | -2.77 | rs7977742  | -0.001005 | -2.86  | 2.0547  | 309 | 1   | lasso | -2.05475  | 0.0399   | Brain_Cortex.nofilter     |
| ENSG00000175183.9  | 12 | 76879059  | 76879060  | 0.308875  | rs1498748  | 3.27  | rs11116780 | 0.166071  | -5.67  | -1.987  | 470 | 470 | susie | 2.09386   | 0.03627  | Brain_Cortex.nofilter     |
| ENSG00000165891.15 | 12 | 77065579  | 77065580  | 0.101496  | rs1498748  | 3.27  | rs11116780 | 0.12845   | -4.99  | -1.987  | 521 | 1   | top1  | 1.987     | 0.04692  | Brain_Cortex.nofilter     |
| ENSG00000257194.2  | 12 | 90107738  | 90107739  | 0.126853  | rs10777221 | 2.79  | rs10777211 | 0.080325  | -4.13  | 2.1155  | 335 | 1   | top1  | -2.11553  | 0.03438  | Brain_Cortex.nofilter     |
| ENSG00000165502.6  | 14 | 49620684  | 49620685  | 0.452224  | rs8021453  | 2.85  | rs2985697  | 0.438111  | -9     | 2.17    | 381 | 1   | top1  | -2.17     | 0.03001  | Brain_Cortex.nofilter     |
| ENSG00000100614.17 | 14 | 60245751  | 60245752  | 0.245381  | rs10151922 | 2.71  | rs10151922 | 0.203149  | 6.39   | 2.7111  | 282 | 282 | susie | 2.829     | 0.00467  | Brain_Cortex.nofilter     |
| ENSG00000254718.6  | 14 | 60248764  | 60248765  | 0.028807  | rs10151922 | 2.71  | rs8016349  | -0.005495 | -2.94  | 1.875   | 281 | 9   | enet  | -2.4988   | 0.01246  | Brain_Cortex.nofilter     |
| ENSG00000139973.16 | 14 | 61811973  | 61811974  | 0.079232  | rs2245442  | -2.72 | rs17099345 | 0.002504  | -3.34  | 1.9891  | 530 | 1   | lasso | -1.9891   | 0.04669  | Brain_Cortex.nofilter     |
| ENSG00000259814.1  | 15 | 29611211  | 29611212  | -0.064925 | rs898253   | 2.64  | rs6495814  | 0.017858  | -3.43  | 3.2362  | 472 | 1   | top1  | -3.2362   | 0.02001  | Brain_Cortex.nofilter     |
| ENSG00000256061.7  | 15 | 55508233  | 55508234  | 0.192167  | rs16975936 | 2.83  | rs11071224 | -0.005244 | -3.67  | 0.224   | 423 | 423 | susie | -3.1316   | 0.00174  | Brain_Cortex.nofilter     |
| ENSG00000259511.2  | 15 | 84172489  | 84172490  | 0.238334  | rs1426159  | -2.61 | rs2279924  | 0.070179  | 4.57   | 0.126   | 211 | 25  | enet  | -2.0243   | 0.04294  | Brain_Cortex.nofilter     |
| ENSG00000140990.14 | 16 | 1959507   | 1959508   | -0.051654 | rs2064289  | -4.39 | rs17602    | 0.040144  | 3.57   | -2.5407 | 443 | 1   | top1  | -2.5407   | 0.011062 | Brain_Cortex.nofilter     |
| ENSG00000255513.1  | 16 | 1964094   | 1964095   | 0.743165  | rs2064289  | -4.39 | rs758334   | 0.409956  | 8.92   | -3.2025 | 443 | 443 | susie | -3.1977   | 0.001385 | Brain_Cortex.nofilter     |
| ENSG00000127554.12 | 16 | 1984206   | 1984207   | 0.401218  | rs8058190  | 4.38  | rs17653749 | 0.142385  | 5.17   | -2.0552 | 432 | 1   | top1  | -2.0552   | 0.039856 | Brain_Cortex.nofilter     |
| ENSG00000127561.14 | 16 | 1989659   | 1989660   | 0.095521  | rs8058190  | 4.38  | rs4278751  | -0.00168  | 3.05   | 0.2412  | 423 | 423 | susie | 3.8558    | 0.000115 | Brain_Cortex.nofilter     |
| ENSG00000065054.13 | 16 | 2025355   | 2025356   | 0.004276  | rs2667684  | -4.32 | rs2247696  | -0.005016 | 2.85   | -3.513  | 399 | 1   | lasso | -3.513    | 0.000443 | Brain_Cortex.nofilter     |
| ENSG00000167964.12 | 16 | 2140802   | 2140803   | 0.096218  | rs8058190  | 4.35  | rs9928737  | 0.002256  | -3.11  | 2.4841  | 360 | 1   | top1  | -2.4841   | 0.012986 | Brain_Cortex.nofilter     |
| ENSG00000131653.12 | 16 | 2155698   | 2155699   | 0.003787  | rs8058190  | 4.3   | rs4787277  | 0.005126  | -3.02  | 1.0197  | 353 | 353 | susie | 3.0705    | 0.002137 | Brain_Cortex.nofilter     |
| ENSG00000167971.15 | 16 | 2196524   | 2196525   | 0.015766  | rs8055439  | -4.29 | rs1535343  | -0.00078  | -2.26  | -3.7386 | 346 | 1   | top1  | 3.7386    | 0.000185 | Brain_Cortex.nofilter     |
| ENSG00000263429.3  | 17 | 10804098  | 10804099  | 0.020301  | rs6503345  | -3.34 | rs2874502  | -0.005519 | 2.99   | 0.459   | 481 | 481 | susie | -2.5752   | 0.01002  | Brain_Cortex.nofilter     |
| ENSG00000256618.2  | 17 | 22523110  | 22523111  | -0.013554 | rs12150316 | -2.25 | rs12150316 | -0.000841 | 2.3    | -2.248  | 99  | 1   | enet  | -2.248    | 0.02458  | Brain_Cortex.nofilter     |
| ENSG00000184988.8  | 17 | 43211834  | 43211835  | 0.030237  | rs324079   | -2.63 | rs324079   | 0.004258  | -2.76  | -2.633  | 264 | 1   | top1  |           |          |                           |

|                    |    |           |           |           |            |       |            |           |       |          |     |     |       |           |          |                             |
|--------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|-------|----------|-----|-----|-------|-----------|----------|-----------------------------|
| ENSG00000269794.1  | 19 | 58319276  | 58319277  | -0.011088 | rs260461   | 3.52  | rs2445859  | 0.003246  | 3.01  | 2.892    | 336 | 1   | lasso | 2.892     | 0.00383  | Brain_Cortex.no             |
| ENSG00000182318.5  | 19 | 58327018  | 58327019  | 0.102121  | rs260461   | 3.53  | rs35713506 | -0.00531  | -2.93 | -1.0217  | 332 | 332 | susie | 2.6073    | 0.00913  | Brain_Cortex.no             |
| ENSG00000223754.1  | 2  | 24201697  | 24201698  | 0.055066  | rs918812   | 3.22  | rs2081302  | 0.1012    | -2.3  | -3.023   | 284 | 1   | top1  | 3.023     | 0.0025   | Brain_Cortex.no             |
| ENSG00000276517.1  | 2  | 32526503  | 32526504  | 0.156146  | rs10181198 | -2.62 | rs4952258  | 0.00694   | -3.48 | 0.1453   | 379 | 379 | susie | -2.4671   | 0.01362  | Brain_Cortex.no             |
| ENSG00000212978.6  | 2  | 61144968  | 61144969  | 0.016191  | rs778755   | 3.63  | rs2901182  | -0.00547  | -3.06 | -2.8825  | 314 | 314 | susie | 2.6234    | 0.0087   | Brain_Cortex.no             |
| ENSG00000271889.1  | 2  | 61162104  | 61162105  | 0.099951  | rs778755   | 3.63  | rs9309332  | 0.00826   | 3.68  | -2.094   | 311 | 10  | enet  | -2.4076   | 0.01606  | Brain_Cortex.no             |
| ENSG00000273302.1  | 2  | 61199978  | 61199979  | 0.057609  | rs778755   | 3.65  | rs1177290  | 0.00654   | -4    | 2.123    | 303 | 303 | susie | -2.5684   | 0.01022  | Brain_Cortex.no             |
| ENSG00000163586.9  | 2  | 88128115  | 88128116  | 0.534194  | rs6712707  | -2.94 | rs6735524  | 0.231     | -7.45 | 1.6781   | 256 | 32  | enet  | -2.0244   | 0.04293  | Brain_Cortex.no             |
| ENSG00000230066.7  | 2  | 88765806  | 88765807  | 0.099237  | rs6712707  | -2.94 | rs13416374 | -0.0038   | -2.42 | 0.386    | 163 | 163 | susie | -2.2592   | 0.02387  | Brain_Cortex.no             |
| ENSG00000211597.2  | 2  | 88861922  | 88861923  | 0.007415  | rs6712707  | -2.94 | rs4449134  | -0.00545  | 2.37  | -2.185   | 134 | 1   | top1  | -2.185    | 0.02889  | Brain_Cortex.no             |
| ENSG00000163121.9  | 2  | 96508108  | 96508109  | 0.042124  | rs7582249  | -3.28 | rs2579506  | 0.0109    | 3.18  | -1.8009  | 213 | 213 | susie | -1.9917   | 0.04641  | Brain_Cortex.no             |
| ENSG00000196843.15 | 2  | 96536748  | 96536749  | 0.038702  | rs7582249  | -3.28 | rs12613171 | 0.0187    | -3.11 | 2.7522   | 213 | 1   | top1  | -2.7522   | 0.00592  | Brain_Cortex.no             |
| ENSG00000158417.10 | 2  | 99337352  | 99337353  | -0.024786 | rs17022634 | 2.81  | rs10208260 | 0.0238    | -2.19 | 2.793    | 320 | 1   | top1  | -2.793    | 0.00522  | Brain_Cortex.no             |
| ENSG00000157827.19 | 2  | 152335236 | 152335237 | 0.164924  | rs11893938 | 2.64  | rs3791626  | -0.00431  | 3.48  | -2.075   | 417 | 13  | enet  | -2.219    | 0.02648  | Brain_Cortex.no             |
| ENSG00000162989.4  | 2  | 154698298 | 154698299 | 0.334423  | rs2053671  | -3.28 | rs765439   | 0.235     | -6.64 | -2.0484  | 395 | 12  | enet  | 2.7542    | 0.00588  | Brain_Cortex.no             |
| ENSG00000232320.6  | 2  | 161341325 | 161341326 | -0.009621 | rs13413741 | -3.03 | rs1710627  | 0.0111    | 2.04  | -2.151   | 377 | 1   | top1  | -2.151    | 0.03148  | Brain_Cortex.no             |
| ENSG000001384442.9 | 2  | 203014797 | 203014798 | 0.077328  | rs34807562 | -2.98 | rs12247248 | 0.0045    | 3.07  | -2.9797  | 261 | 1   | top1  | -2.9797   | 0.00289  | Brain_Cortex.no             |
| ENSG00000144426.18 | 2  | 203014878 | 203014879 | 0.129165  | rs34807562 | -2.98 | rs11679740 | 0.00111   | 3.26  | -2.2127  | 261 | 23  | enet  | -3.2544   | 0.00114  | Brain_Cortex.no             |
| ENSG00000138413.13 | 2  | 208266073 | 208266074 | 0.055181  | rs13394305 | 2.37  | rs6751157  | -0.00372  | -3.06 | 2.3103   | 372 | 15  | enet  | -3.0833   | 0.00205  | Brain_Cortex.no             |
| ENSG00000101460.12 | 20 | 34546853  | 34546854  | 0.436541  | rs12624640 | 3.21  | rs1205345  | 0.2805    | 7.75  | 2.734    | 302 | 302 | susie | 2.691     | 0.00712  | Brain_Cortex.no             |
| ENSG00000101464.10 | 20 | 34677084  | 34677085  | 0.065988  | rs12624640 | 3.22  | rs6058079  | 0.00595   | 2.95  | -2.107   | 317 | 1   | top1  | -2.107    | 0.03514  | Brain_Cortex.no             |
| ENSG00000205930.8  | 21 | 32772099  | 32772100  | 0.06996   | rs2008980  | 3.17  | rs9980375  | 0.01315   | -3.47 | 1.9146   | 484 | 4   | lasso | -2.0154   | 0.0439   | Brain_Cortex.no             |
| ENSG00000279690.1  | 21 | 32791503  | 32791504  | 0.04346   | rs8132490  | 3.26  | rs9967977  | -0.00457  | -3.1  | 1.9315   | 487 | 2   | lasso | -2.2751   | 0.0229   | Brain_Cortex.no             |
| ENSG00000273210.1  | 21 | 37365788  | 37365789  | 0.03378   | rs11088397 | 4.7   | rs10470178 | -0.00532  | -2.96 | 4.404    | 498 | 498 | susie | -4.1522   | 3.29E-05 | Brain_Cortex.no             |
| ENSG00000157540.19 | 21 | 37365932  | 37365933  | 0.07668   | rs11088397 | 4.7   | rs11088397 | 0.0328    | 3.38  | 4.695    | 498 | 1   | top1  | 4.695     | 2.67E-06 | Brain_Cortex.no             |
| ENSG00000134121.9  | 3  | 196595    | 196596    | 0.130206  | rs2729145  | -2.58 | rs17329247 | -0.001834 | -3.32 | -0.939   | 358 | 358 | susie | 1.990574  | 0.046528 | Brain_Cortex.no             |
| ENSG00000131374.14 | 3  | 17742747  | 17742748  | 0.003614  | rs13063188 | 3.32  | rs6577599  | -0.00216  | -2.68 | 2.249    | 249 | 249 | susie | -2.046958 | 0.040662 | Brain_Cortex.no             |
| ENSG00000239732.3  | 3  | 52226162  | 52226163  | 0.146297  | rs6774097  | 2.84  | rs613519   | 0.032865  | -3.56 | 2.017    | 322 | 322 | susie | -2.024062 | 0.042964 | Brain_Cortex.no             |
| ENSG00000168237.17 | 3  | 52287088  | 52287089  | 0.113783  | rs6774097  | 2.83  | rs524986   | 0.058275  | 4.37  | -1.872   | 336 | 336 | susie | -2.154058 | 0.031236 | Brain_Cortex.no             |
| ENSG00000239519.1  | 3  | 86028006  | 86028007  | 0.258131  | rs6549078  | -3.52 | rs12486982 | 0.183984  | 6.51  | 2.06     | 311 | 18  | enet  | 2.056075  | 0.039775 | Brain_Cortex.no             |
| ENSG00000169714.16 | 3  | 129183921 | 129183922 | 0.018036  | rs11709852 | 3.13  | rs10342    | -0.00493  | -2.66 | -1.7561  | 301 | 3   | lasso | 2.208275  | 0.027225 | Brain_Cortex.no             |
| ENSG00000251474.6  | 3  | 129399654 | 129399655 | 0.182714  | rs11709852 | -3.11 | rs4429625  | 0.104518  | 5.05  | -2.716   | 272 | 13  | enet  | -3.285519 | 0.001018 | Brain_Cortex.no             |
| ENSG00000243305.1  | 3  | 152496812 | 152496813 | -0.00731  | rs6440799  | 3.69  | rs7633673  | 0.003315  | 2.44  | 3.6879   | 331 | 1   | top1  | 3.687858  | 0.000226 | Brain_Cortex.no             |
| ENSG00000152990.13 | 4  | 22516053  | 22516054  | 0.165368  | rs2581965  | -2.99 | rs2581982  | 0.008402  | 3.99  | 2.194    | 351 | 351 | susie | 2.185     | 0.02889  | Brain_Cortex.no             |
| ENSG00000237350.1  | 4  | 22727949  | 22727950  | 0.300779  | rs2581965  | -2.99 | rs1553425  | -0.001058 | -2.53 | -1.439   | 303 | 303 | susie | 2.3295    | 0.01983  | Brain_Cortex.no             |
| ENSG00000177752.14 | 4  | 44678425  | 44678426  | 0.120774  | rs10517102 | 3.56  | rs17600797 | 0.058267  | 4.9   | -2.6376  | 371 | 371 | susie | -2.8335   | 0.0046   | Brain_Cortex.no             |
| ENSG00000151806.13 | 4  | 44678556  | 44678557  | 0.443943  | rs10517102 | 3.56  | rs12499960 | 0.423254  | -9    | -2.429   | 371 | 1   | top1  | 2.429     | 0.01514  | Brain_Cortex.no             |
| ENSG00000163281.11 | 4  | 44726594  | 44726595  | 0.576305  | rs10517102 | 3.33  | rs12499960 | 0.421512  | 9.14  | -2.429   | 374 | 374 | susie | -2.5073   | 0.01217  | Brain_Cortex.no             |
| ENSG00000145247.11 | 4  | 48906936  | 48906937  | 0.174331  | rs17576196 | 3.18  | rs2605242  | 0.048402  | 3.28  | -2.002   | 185 | 1   | top1  | -2.002    | 0.04528  | Brain_Cortex.no             |
| ENSG00000250125.1  | 4  | 65004499  | 65004500  | 0.176031  | rs17086224 | 3.62  | rs7670554  | 0.108224  | 3.52  | 2.8889   | 395 | 395 | susie | 2.9006    | 0.00373  | Brain_Cortex.no             |
| ENSG00000174792.10 | 4  | 75556047  | 75556048  | 0.161196  | rs17220803 | -4.2  | rs2061742  | 0.113409  | 4.9   | 2.6176   | 430 | 1   | top1  | 2.6176    | 0.00885  | Brain_Cortex.no             |
| ENSG00000138757.14 | 4  | 75724524  | 75724525  | 0.244894  | rs7685696  | 5.65  | rs1553985  | 0.138513  | -5.36 | 2.84     | 459 | 459 | susie | -2.3581   | 0.01837  | Brain_Cortex.no             |
| ENSG00000198301.11 | 4  | 75990962  | 75990963  | 0.093088  | rs17236661 | -5.83 | rs2175766  | 0.00377   | -3.33 | -3.193   | 461 | 1   | top1  | 3.193     | 0.00141  | Brain_Cortex.no             |
| ENSG00000189157.13 | 4  | 76214039  | 76214040  | 0.636639  | rs17236661 | -5.83 | rs1876539  | 0.510589  | -9.81 | 4.5102   | 482 | 482 | susie | -2.8435   | 0.00446  | Brain_Cortex.no             |
| ENSG00000138760.9  | 4  | 76234535  | 76234536  | 0.063092  | rs17236661 | -5.83 | rs3796479  | 0.004248  | 3.49  | 1.7581   | 485 | 485 | susie | 2.6423    | 0.00824  | Brain_Cortex.no             |
| ENSG00000248890.1  | 4  | 144661356 | 144661357 | 0.201434  | rs21755586 | 2.88  | rs7680661  | 0.037425  | -3.9  | 1.9806   | 253 | 1   | top1  | -1.9806   | 0.04764  | Brain_Cortex.no             |
| ENSG00000145730.20 | 5  | 102753980 | 102753981 | 0.079758  | rs17154942 | -3.46 | rs17154889 | 0.007052  | 2.8   | -3.0906  | 304 | 1   | top1  | -3.0906   | 0.002    | Brain_Cortex.no             |
| ENSG00000175749.11 | 5  | 103032375 | 103032376 | 0.220773  | rs2288788  | -3.7  | rs1826673  | 0.20605   | 6.35  | -3.2449  | 307 | 1   | top1  | -3.2449   | 0.00118  | Brain_Cortex.no             |
| ENSG00000135346.8  | 6  | 87095405  | 87095406  | -0.02011  | rs7739124  | 2.9   | rs10944288 | 0.01466   | -1.89 | -1.971   | 388 | 1   | top1  | 1.9712    | 0.0487   | Brain_Cortex.no             |
| ENSG00000203801.8  | 6  | 108751653 | 108751654 | -0.021639 | rs9486893  | -3.48 | rs9486877  | -0.00516  | -1.95 | 2.391    | 347 | 1   | top1  | -2.391    | 0.0168   | Brain_Cortex.no             |
| ENSG000001124613.8 | 6  | 27374614  | 27374615  | 0.285622  | rs6918131  | -4.23 | rs6920362  | 0.243725  | -6.75 | -4.114   | 393 | 1   | top1  | 4.114     | 3.89E-05 | Brain_Cortex.no             |
| ENSG00000271755.1  | 6  | 27406963  | 27406964  | 0.276582  | rs6918131  | -4.23 | rs6456785  | 0.122349  | -5.35 | -2.682   | 406 | 406 | susie | 2.9699    | 0.00298  | Brain_Cortex.no             |
| ENSG00000237154.2  | 6  | 27407696  | 27407697  | 0.143827  | rs6918131  | -4.23 | rs10946933 | 0.038925  | -4.03 | -3.9354  | 406 | 406 | susie | 3.7505    | 0.000176 | Brain_Cortex.no             |
| ENSG00000263426.2  | 6  | 28977474  | 28977475  | -0.009022 | rs4713216  | 2.37  | rs4713216  | -0.007821 | 2.23  | 2.37     | 12  | 1   | top1  | 2.37      | 0.0178   | Brain_Cortex.no             |
| ENSG00000106537.7  | 7  | 16753534  | 16753535  | 0.141935  | rs1380380  | -3.38 | rs6951449  | 0.0148    | -3.4  | 2.69308  | 642 | 1   | top1  | -2.6931   | 0.00708  | Brain_Cortex.no             |
| ENSG00000226220.1  | 7  | 39797910  | 39797911  | 0.084502  | rs17171597 | -3.15 | rs4720341  | 0.00532   | 3.44  | -1.73988 | 332 | 4   | lasso | -2.4564   | 0.01404  | Brain_Cortex.no             |
| ENSG00000106133.17 | 7  | 72954789  | 72954790  | 0.340295  | rs17339199 | -2.78 | rs7792924  | 0.0655    | 5.99  | -1.28731 | 94  | 9   | lasso | -1.9877   | 0.04684  | Brain_Cortex.no             |
| ENSG00000186472.19 | 7  | 83162929  | 83162930  | 0.03015   | rs13229774 | 2.88  | rs970867   | -0.00431  | -3.05 | 1.53815  | 431 | 431 | susie | -2.0436   | 0.04099  | Brain_Cortex.no             |
| ENSG00000184903.9  | 7  | 111562516 | 111562517 | 0.045351  | rs214456   | -3.34 | rs12705776 | -0.00477  | 3.82  | 2.08117  | 317 | 317 | susie | 2.154     | 0.03124  | Brain_Cortex.no             |
| ENSG00000234418.1  | 7  | 122216346 | 122216347 | 0.055932  | rs7785453  | 3.38  | rs17144133 | -0.00232  | -3.09 | 2.665    | 332 | 3   | lasso | -3.0962   | 0.00196  | Brain_Cortex.no             |
| ENSG00000168333.13 | 8  | 49054310  | 49054311  | 0.010145  | rs6982145  | -3.19 | rs4873289  | -0.00552  | -2.84 | 2.454    | 284 | 1   | lasso | -2.454    | 0.01413  | Brain_Cortex.no             |
| ENSG00000260398.1  | 8  | 78605951  | 78605952  | 0.272815  | rs16919538 | 3.73  | rs1062248  | 0.137     | 5.23  | 2.7956   | 328 | 328 | susie | 2.7385    | 0.00617  | Brain_Cortex.no             |
| ENSG00000119457.7  | 9  | 112890912 | 112890913 | 0.243017  | rs786990   | -3.41 | rs3802492  | 0.099071  | 5.48  | 1.114    | 533 | 6   | lasso | 2.28965   | 0.022    | Brain_Cortex.no             |
| ENSG00000239636.1  | 1  | 35577728  | 35577729  | 0.027966  | rs13375070 | -2.3  | rs13375070 | -0.005013 | 2.59  | -2.299   | 180 | 1   | top1  | -2.299    | 0.0215   | Brain_Frontal_Cortex_BA9.no |
| ENSG00000162692.10 | 1  | 100719741 | 100719742 | 0.029145  | rs6689978  | -2.62 | rs3176874  | 0.027265  | 2.15  | 2.083    | 381 | 1   | top1  | 2.08      |          |                             |

|                    |    |           |           |           |            |        |            |           |       |          |     |     |       |           |          |                                   |
|--------------------|----|-----------|-----------|-----------|------------|--------|------------|-----------|-------|----------|-----|-----|-------|-----------|----------|-----------------------------------|
| ENSG00000221817.9  | 10 | 73495524  | 73495525  | 0.129144  | rs2227564  | -2.94  | rs12570126 | -0.00639  | -2.67 | 0.481    | 241 | 11  | enet  | -2.271    | 0.0232   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000197142.10 | 10 | 112374017 | 112374018 | 0.09197   | rs7907012  | -3.05  | rs7904918  | -0.00232  | 2.75  | -0.665   | 462 | 462 | susie | -2.069    | 0.0385   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000111711.9  | 12 | 21501780  | 21501781  | 0.180784  | rs7311964  | 2.58   | rs1061627  | 0.00793   | 3.62  | 1.308    | 546 | 43  | enet  | 2.383     | 0.01719  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000066084.12 | 12 | 50505106  | 50505107  | 0.108837  | rs10783342 | 2.99   | rs10876041 | -0.00456  | 3.4   | 1.951    | 296 | 4   | lasso | 2.639     | 0.00831  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000175183.9  | 12 | 76879059  | 76879060  | 0.370205  | rs1498748  | 3.27   | rs11116780 | 0.219     | -5.93 | -1.987   | 469 | 469 | susie | 2.053     | 0.0401   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000067798.14 | 12 | 77324640  | 77324641  | 0.005798  | rs11115613 | -3.75  | rs11106355 | 0.0163    | -2.84 | 2.968    | 539 | 1   | top1  | 2.968     | 0.003    | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000165621.8  | 13 | 96994729  | 96994730  | 0.361674  | rs4771267  | 3.7    | rs1501861  | 0.244357  | 6.26  | 2.261    | 354 | 1   | top1  | 2.261     | 0.0238   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000165502.6  | 14 | 49620684  | 49620685  | 0.48629   | rs8021453  | 2.85   | rs2985697  | 0.313027  | -7.24 | 2.17     | 380 | 1   | top1  | -2.17     | 0.03001  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000100614.17 | 14 | 60245751  | 60245752  | 0.126243  | rs10151922 | 2.71   | rs10151922 | 0.064957  | 3.95  | 2.7111   | 281 | 1   | top1  | 2.7111    | 0.00671  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000054983.16 | 14 | 87993664  | 87993665  | 0.072657  | rs10142115 | 3.49   | rs7156276  | 0.003204  | 3.33  | 1.81     | 454 | 2   | lasso | 2.5084    | 0.01213  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000186399.10 | 15 | 30414161  | 30414162  | 0.05753   | rs16956332 | -2.39  | rs8040523  | 0.01517   | -3.21 | -0.94234 | 128 | 7   | enet  | 1.996     | 0.0459   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000255513.1  | 16 | 1964094   | 1964095   | 0.486696  | rs2064289  | -4.39  | rs338791   | 0.29      | 7.11  | -3.1267  | 446 | 446 | susie | -3.1447   | 0.00166  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000127554.12 | 16 | 1984206   | 1984207   | 0.157932  | rs8058190  | 4.38   | rs3785272  | 0.0375    | 4.23  | -3.7289  | 435 | 1   | top1  | -3.7289   | 0.000192 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000127561.14 | 16 | 1989659   | 1989660   | 0.020673  | rs8058190  | 4.38   | rs8055439  | -0.00644  | -2.83 | -4.287   | 426 | 1   | lasso | 4.287     | 1.81E-05 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000183971.6  | 16 | 2009925   | 2009926   | 0.01903   | rs8058190  | 4.4    | rs36232    | 0.0263    | 2.56  | 2.765    | 414 | 1   | top1  | 2.765     | 0.00569  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG000000259933.6 | 16 | 2091597   | 2091598   | -0.081699 | rs8058190  | 4.32   | rs7190034  | -0.00275  | -2.92 | -4.086   | 375 | 1   | lasso | 4.086     | 4.39E-05 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000260447.1  | 16 | 2119206   | 2119207   | 0.067601  | rs8055439  | -4.29  | rs3211995  | -0.00298  | -2.93 | 3.1702   | 369 | 2   | lasso | -2.7757   | 0.00551  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000159714.10 | 16 | 67416473  | 67416474  | 0.116385  | rs1152048  | -2.27  | rs4783585  | 0.0155    | 3.27  | -2.145   | 226 | 1   | top1  | -2.145    | 0.032    | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000102974.14 | 16 | 67562406  | 67562407  | 0.058005  | rs4783585  | -2.15  | rs4783585  | 0.0191    | 2.86  | -2.145   | 223 | 1   | top1  | -2.145    | 0.032    | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000276408.1  | 16 | 75556391  | 75556392  | -0.087496 | rs150888   | -2.47  | rs7205220  | 0.0044    | -2.31 | 2.0761   | 368 | 1   | top1  | -2.0761   | 0.0379   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000167549.18 | 17 | 29622906  | 29622907  | 0.041945  | rs1876437  | -2.64  | rs636000   | 0.000705  | 3.17  | -2.369   | 307 | 1   | top1  | -2.369    | 0.0178   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000267452.1  | 17 | 51435426  | 51435427  | 0.261232  | rs16950359 | -2.47  | rs9915136  | 0.092     | -4.22 | 2.101    | 463 | 1   | top1  | -2.101    | 0.0356   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000265313.5  | 17 | 59526945  | 59526946  | 0.095527  | rs17580385 | -2.45  | rs764424   | 0.025     | 3.45  | -1.9688  | 303 | 1   | top1  | -1.9688   | 0.049    | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000136490.8  | 17 | 63700684  | 63700685  | 0.043013  | rs8078549  | 2.52   | rs4968772  | -0.00464  | 2.54  | 2.327    | 302 | 2   | lasso | 2.2415    | 0.025    | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000266173.6  | 17 | 63741985  | 63741986  | 0.070227  | rs4465659  | 2.41   | rs9944483  | -0.000293 | -3.23 | 2.008    | 313 | 4   | lasso | -2.008    | 0.0446   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000178607.15 | 17 | 64130818  | 64130819  | 0.015448  | rs7211557  | 2.4    | rs2955245  | 0.0105    | -2.98 | 2.0472   | 293 | 1   | top1  | -2.0472   | 0.0406   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000101746.15 | 18 | 34224951  | 34224952  | 0.183303  | rs12607558 | 3.15   | rs4073420  | 0.010072  | 3.41  | -0.5477  | 310 | 310 | susie | -2.31781  | 0.0205   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000166974.12 | 18 | 34976927  | 34976928  | 0.041245  | rs4145318  | 3.24   | rs671757   | -0.004097 | -2.94 | -1.8879  | 374 | 10  | lasso | 1.98236   | 0.0474   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000152467.9  | 19 | 58034031  | 58034032  | 0.002897  | rs260445   | 3.5    | rs12462307 | -0.00523  | -3.16 | -2.19    | 445 | 1   | lasso | 2.19      | 0.0285   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000173960.13 | 2  | 23927284  | 23927285  | 0.133939  | rs1991083  | -3.28  | rs12052954 | 0.0112    | -2.71 | -2.071   | 376 | 1   | top1  | 2.071     | 0.03836  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000115128.6  | 2  | 24076442  | 24076443  | 0.003098  | rs1991083  | -3.34  | rs605750   | -0.00502  | 2.16  | 1.049    | 316 | 316 | susie | -1.969735 | 0.04887  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000276517.1  | 2  | 32526503  | 32526504  | 0.089738  | rs10181198 | -2.62  | rs17395936 | -0.00636  | 3.01  | -1.6962  | 379 | 379 | susie | -2.098758 | 0.03584  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000273302.1  | 2  | 61199978  | 61199979  | 0.054538  | rs778755   | 3.65   | rs1615070  | -0.00536  | 3.59  | -1.229   | 303 | 303 | susie | -2.094633 | 0.0362   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000135956.8  | 2  | 96265993  | 96265994  | 0.043316  | rs968470   | -3.17  | rs2271893  | 0.0122    | 3.09  | -1.8055  | 154 | 154 | susie | -2.02148  | 0.04323  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000230747.1  | 2  | 96321730  | 96321731  | 0.077802  | rs7582249  | -3.23  | rs2280356  | 0.0377    | -3.32 | -2.788   | 161 | 1   | top1  | 2.788     | 0.0053   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000198885.9  | 2  | 96325330  | 96325331  | 0.119489  | rs7582249  | -3.3   | rs4144055  | 0.107     | 5.16  | -0.9313  | 162 | 13  | enet  | -2.018958 | 0.04349  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG000001633121.9 | 2  | 96508108  | 96508109  | 0.006568  | rs7582249  | -3.28  | rs7599598  | -0.00548  | -2.41 | -3.141   | 212 | 1   | lasso | -3.141    | 0.00168  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000235480.1  | 2  | 96532305  | 96532306  | 0.171497  | rs7582249  | -3.28  | rs4907312  | 0.000909  | 2.84  | -0.6453  | 212 | 212 | susie | -2.815714 | 0.00487  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000178171.10 | 2  | 130755434 | 130755435 | 0.024895  | rs6721186  | 2.58   | rs6705546  | 0.0085    | -2.75 | -2.019   | 169 | 1   | lasso | 2.019     | 0.04349  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000115947.13 | 2  | 148020762 | 148020763 | 0.142534  | rs1234404  | -3.6   | rs17218798 | -0.00641  | -3.53 | -0.8525  | 327 | 23  | enet  | 2.16824   | 0.03014  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000144290.16 | 2  | 161427452 | 161427453 | 0.026574  | rs13413741 | -3.03  | rs1722656  | 0.00671   | 3.1   | -2.3542  | 361 | 1   | top1  | -2.354236 | 0.01856  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000163510.13 | 2  | 180007112 | 180007113 | 0.062783  | rs10497557 | 4.23   | rs12052337 | -0.00636  | 3.2   | -1.989   | 516 | 1   | lasso | -1.989    | 0.0467   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000138443.15 | 2  | 203328218 | 203328219 | 0.003708  | rs4675317  | -2.96  | rs3115968  | -0.00389  | 2.54  | 3.292    | 292 | 292 | susie | 2.092244  | 0.03642  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000101460.12 | 20 | 34546853  | 34546854  | 0.147338  | rs12624640 | 3.2    | rs6088542  | 0.10624   | -5.29 | -1.43    | 303 | 12  | enet  | 2.176     | 0.0296   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000157540.19 | 21 | 37365932  | 37365933  | 0.05266   | rs11088397 | 4.7    | rs858027   | -0.005657 | -2.93 | 1.06     | 499 | 499 | susie | 2.6243    | 0.00868  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000157542.9  | 21 | 37916445  | 37916446  | 0.25381   | rs2835771  | 4.71   | rs2835831  | 0.195692  | -5.69 | -1.77    | 538 | 3   | lasso | 2.1005    | 0.03569  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000172936.12 | 3  | 38138477  | 38138478  | 0.002513  | rs967682   | 3.51   | rs11129780 | 0.0144    | -2.16 | 2.47666  | 425 | 1   | top1  | -2.47666  | 0.01326  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000243224.1  | 3  | 52239260  | 52239261  | -0.007859 | rs6774097  | 2.84   | rs10510759 | -0.00518  | -2.66 | 2.108    | 320 | 5   | lasso | -2.10801  | 0.03503  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000168237.17 | 3  | 52287088  | 52287089  | 0.064527  | rs6774097  | 2.83   | rs6765687  | -0.00549  | 3.18  | -2.43537 | 334 | 334 | susie | -2.14866  | 0.03166  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000164091.11 | 3  | 52288019  | 52288020  | 0.0072    | rs6774097  | 2.85   | rs6774097  | -0.00375  | 2.71  | 2.84528  | 335 | 1   | top1  | 2.84528   | 0.00444  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000272886.5  | 3  | 53347609  | 53347610  | 0.065847  | rs611914   | -3.36  | rs2581824  | -0.00644  | -3.08 | -1.85023 | 405 | 3   | lasso | 2.1181    | 0.03417  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000163689.19 | 3  | 59050083  | 59050084  | 0.313766  | rs4679561  | 0.0118 | rs3749289  | 0.0118    | -3.85 | 1.374    | 415 | 415 | susie | -1.9957   | 0.04597  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000114656.10 | 3  | 129002689 | 129002690 | 0.011963  | rs11709852 | 3.08   | rs718613   | -0.00577  | -2.45 | 0.82789  | 314 | 314 | susie | -3.05409  | 0.00226  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000168917.8  | 3  | 136818646 | 136818647 | 0.045749  | rs17200503 | 2.2    | rs835636   | -0.0043   | 2.88  | 1.143    | 339 | 339 | susie | 2.19504   | 0.02816  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000158186.12 | 3  | 138347647 | 138347648 | 0.014392  | rs7626349  | 2.26   | rs774008   | -0.00625  | -2.75 | -0.626   | 305 | 7   | enet  | 2.29603   | 0.02167  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000234851.4  | 3  | 161429343 | 161429344 | -0.021488 | rs2404572  | -3.08  | rs16832129 | 0.00653   | 2     | -2.86219 | 365 | 1   | top1  | -2.86219  | 0.00421  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000152990.13 | 4  | 22516053  | 22516054  | 0.007531  | rs2581965  | -2.99  | rs2009731  | 0.0354    | 3.52  | 2.15871  | 350 | 1   | top1  | 2.15871   | 0.0309   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000224097.5  | 4  | 39480254  | 39480255  | 0.265323  | rs2566103  | 2.38   | rs13144464 | 0.219     | 6.13  | 2.205    | 367 | 5   | lasso | 2.21228   | 0.0269   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000177752.14 | 4  | 44678425  | 44678426  | 0.137684  | rs10517102 | 3.56   | rs6447363  | 0.109     | 5.03  | -2.60607 | 371 | 7   | lasso | -2.84864  | 0.00439  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000151806.13 | 4  | 44678556  | 44678557  | 0.531235  | rs10517102 | 3.56   | rs12499960 | 0.459     | -8.53 | -2.429   | 371 | 1   | top1  | 2.429     | 0.0151   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000163281.11 | 4  | 44726594  | 44726595  | 0.42993   | rs10517102 | 3.33   | rs12499960 | 0.326     | 7.25  | -2.429   | 374 | 1   | top1  | -2.429    | 0.0151   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000250125.1  | 4  | 65004499  | 65004500  | 0.163321  | rs17086224 | 3.62   | rs1864522  | 0.093     | 4.41  | 1.458    | 395 | 395 | susie | 2.58193   | 0.00982  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000018189.12 | 4  | 70704800  | 70704801  | 0.037417  | rs11941079 | 4.36   | rs4694090  | -0.0027   | -2.97 | 1.9      |     |     |       |           |          |                                   |

|                     |    |           |           |           |            |       |            |           |       |          |     |     |       |           |          |                                   |
|---------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|-------|----------|-----|-----|-------|-----------|----------|-----------------------------------|
| ENSG00000113356.11  | 5  | 90471747  | 90471748  | -0.045921 | rs16868974 | 2.88  | rs2438361  | 0.003221  | 2.29  | 2.4839   | 360 | 1   | top1  | 2.483933  | 0.012994 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000175749.11  | 5  | 103032375 | 103032376 | 0.185023  | rs2288788  | -3.7  | rs34823    | 0.154209  | 5.09  | -3.433   | 307 | 1   | top1  | -3.433    | 0.000597 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000198108.3   | 5  | 129904471 | 129904472 | 0.053533  | rs30300    | 3.76  | rs12513704 | 0.011527  | -3.13 | -2.225   | 300 | 1   | top1  | 2.225     | 0.026081 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000251680.5   | 5  | 129905916 | 129905917 | 0.089558  | rs30300    | 3.76  | rs888899   | -0.006392 | -3.58 | 2.9976   | 300 | 10  | enet  | -2.966065 | 0.003016 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000271871.1   | 5  | 141952418 | 141952419 | 0.104325  | rs251022   | 2.55  | rs7443175  | -0.003137 | 2.73  | 1.854    | 526 | 526 | susie | 2.488038  | 0.012845 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000118175.7   | 6  | 118894356 | 118894357 | -0.034943 | rs6932585  | -3.98 | rs3819732  | 0.017974  | 2.71  | 2.1115   | 382 | 1   | top1  | 2.1115    | 0.0347   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000259828.1   | 6  | 141447010 | 141447011 | 0.075087  | rs12209540 | 3.06  | rs9373305  | 0.032094  | 3.49  | -2.247   | 270 | 1   | top1  | -2.247    | 0.0246   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000196787.3   | 6  | 27133041  | 27133042  | 0.040962  | rs2393929  | -4.18 | rs7755577  | -0.006414 | -2.61 | 1.471    | 320 | 2   | lasso | -2.43701  | 0.0148   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000276180.1   | 6  | 27138587  | 27138588  | -0.023055 | rs2393929  | -4.18 | rs2142704  | 0.004892  | -2.3  | -3.7946  | 320 | 1   | top1  | 3.79459   | 0.000148 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000204789.4   | 6  | 27360220  | 27360221  | 0.181362  | rs6918131  | -4.23 | rs6914864  | 0.101328  | -5.37 | 1.316    | 386 | 10  | enet  | -2.48852  | 0.0128   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000124613.8   | 6  | 27374614  | 27374615  | 0.255692  | rs6918131  | -4.23 | rs6920362  | 0.215522  | -6.35 | -4.114   | 393 | 393 | susie | 4.13344   | 3.57E-05 | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000271755.1   | 6  | 27406963  | 27406964  | 0.396875  | rs6918131  | -4.23 | rs6456785  | 0.154047  | -5.07 | -2.682   | 406 | 1   | top1  | 2.682     | 0.00732  | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000204657.3   | 6  | 29587454  | 29587455  | -0.004616 | rs4713216  | 2.37  | rs4713216  | -0.006265 | -2.12 | 2.37     | 41  | 1   | lasso | -2.37     | 0.0178   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000106133.17  | 7  | 72954789  | 72954790  | 0.352621  | rs17339199 | -2.78 | rs34014814 | 0.0968    | 5.14  | -1.581   | 94  | 23  | enet  | -2.1076   | 0.0351   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000276538.1   | 7  | 150047853 | 150047854 | 0.03964   | rs757725   | 2.94  | rs855743   | 0.000641  | 2.36  | 2.277    | 286 | 1   | top1  | 2.277     | 0.0228   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG000000067167.7  | 8  | 70608386  | 70608387  | 0.127064  | rs16936921 | -2.21 | rs1380896  | -3.54E-05 | -3.31 | -1.9994  | 281 | 1   | top1  | 1.9994    | 0.0456   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000148158.16  | 9  | 112750837 | 112750838 | 0.066268  | rs786990   | -3.41 | rs17750960 | 0.08551   | -3.92 | 2.441    | 487 | 1   | top1  | -2.441    | 0.0146   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000119457.7   | 9  | 112890912 | 112890913 | 0.342907  | rs786990   | -3.41 | rs3802493  | 0.13569   | -5.12 | -3.1673  | 535 | 4   | lasso | 2.5712    | 0.0101   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000234782.3   | 9  | 118083381 | 118083382 | 0.09411   | rs1335258  | 3.27  | rs1335256  | 0.0012    | -2.95 | 2.3938   | 537 | 3   | lasso | -2.6651   | 0.0077   | Brain_Frontal_Cortex_BA9.nofilter |
| ENSG00000126070.19  | 1  | 35930717  | 35930718  | -0.041717 | rs4653186  | -2.87 | rs4653186  | 0.0503    | -3.6  | -2.874   | 227 | 1   | top1  | 2.874     | 0.00405  | Brain_Hippocampus.nofilter        |
| ENSG00000158796.16  | 1  | 161132687 | 161132688 | -0.067628 | rs1801274  | -4.09 | rs16832364 | -0.00562  | 2.5   | -2.189   | 391 | 1   | top1  | -2.189    | 0.0286   | Brain_Hippocampus.nofilter        |
| ENSG00000143751.9   | 1  | 225999330 | 225999331 | 0.065595  | rs10915933 | -2.86 | rs10915949 | -0.00666  | -2.8  | 1.82357  | 384 | 384 | susie | -1.9905   | 0.04653  | Brain_Hippocampus.nofilter        |
| ENSG00000236031.1   | 1  | 243545597 | 243545598 | 0.021805  | rs10927035 | 4.34  | rs12131092 | -0.00665  | 2.91  | 1.40973  | 299 | 299 | susie | -2.8201   | 0.0048   | Brain_Hippocampus.nofilter        |
| ENSG00000009925.14  | 10 | 38356379  | 38356380  | -0.002663 | rs2749592  | 2.36  | rs2505192  | 0.024293  | 2.25  | 2.0234   | 138 | 1   | top1  | 2.0234    | 0.043    | Brain_Hippocampus.nofilter        |
| ENSG00000107745.17  | 10 | 72626190  | 72626191  | 0.068691  | rs11815867 | 2.47  | rs7903091  | -0.006323 | -3.15 | 2.18     | 244 | 3   | lasso | -2.208    | 0.0272   | Brain_Hippocampus.nofilter        |
| ENSG00000213700.3   | 10 | 73006594  | 73006595  | 0.034173  | rs11815867 | 2.47  | rs12770570 | -0.002213 | -3.23 | -1.868   | 237 | 7   | enet  | 2.1592    | 0.0308   | Brain_Hippocampus.nofilter        |
| ENSG00000227540.1   | 10 | 73252790  | 73252791  | 0.030217  | rs16930108 | 2.79  | rs16930108 | -0.006701 | -2.79 | 2.7858   | 215 | 26  | enet  | 2.3227    | 0.0202   | Brain_Hippocampus.nofilter        |
| ENSG00000135373.12  | 11 | 34621092  | 34621093  | 0.151672  | rs353587   | 3.44  | rs10466455 | -0.00291  | 3.23  | 0.512    | 634 | 634 | susie | -2.4438   | 0.0145   | Brain_Hippocampus.nofilter        |
| ENSG00000157613.10  | 11 | 46277660  | 46277661  | 0.033847  | rs11038699 | -2.62 | rs7949325  | -0.0038   | 2.82  | -1.4002  | 233 | 233 | susie | -2.5403   | 0.0111   | Brain_Hippocampus.nofilter        |
| ENSG00000171204.12  | 11 | 85628572  | 85628573  | 0.113571  | rs543293   | 2.37  | rs1237999  | -0.00659  | -2.89 | 1.9871   | 341 | 11  | lasso | -2.4003   | 0.0164   | Brain_Hippocampus.nofilter        |
| ENSG00000275854.1   | 12 | 32737659  | 32737660  | 0.079242  | rs11830829 | -4.22 | rs11835806 | -0.000601 | -2.81 | -2.055   | 488 | 1   | top1  | 2.055     | 0.0399   | Brain_Hippocampus.nofilter        |
| ENSG00000110975.8   | 12 | 33439818  | 33439819  | 0.055577  | rs11830829 | -4.22 | rs4318054  | -0.004007 | -3.42 | -2.3437  | 373 | 3   | lasso | 2.4212    | 0.0155   | Brain_Hippocampus.nofilter        |
| ENSG00000172766.18  | 13 | 41311204  | 41311205  | -0.006188 | rs9566705  | 3.14  | rs7989372  | -0.005957 | -2.81 | 2.1397   | 334 | 3   | lasso | -2.3672   | 0.0179   | Brain_Hippocampus.nofilter        |
| ENSG00000165621.8   | 13 | 96994729  | 96994730  | 0.112369  | rs4771267  | 3.7   | rs1924574  | -0.0044   | 3.3   | 1.162    | 352 | 19  | enet  | 2.5522    | 0.0107   | Brain_Hippocampus.nofilter        |
| ENSG00000176165.10  | 14 | 28760329  | 28760330  | 0.037406  | rs4981680  | -2.94 | rs1956242  | -0.00674  | -2.94 | -1.99155 | 296 | 1   | lasso | 1.99155   | 0.04642  | Brain_Hippocampus.nofilter        |
| ENSG00000165502.6   | 14 | 49620684  | 49620685  | 0.546208  | rs8021453  | 2.85  | rs2224949  | 0.365     | -7.66 | 2.02933  | 380 | 380 | susie | -2.04254  | 0.0411   | Brain_Hippocampus.nofilter        |
| ENSG00000100614.17  | 14 | 60245751  | 60245752  | 0.06728   | rs10151922 | 2.71  | rs10151922 | 0.0848    | 3.8   | 2.71106  | 282 | 1   | top1  | 2.71106   | 0.00671  | Brain_Hippocampus.nofilter        |
| ENSG00000140030.5   | 14 | 88005123  | 88005124  | -0.028442 | rs10142115 | 3.49  | rs11159834 | 0.0109    | 2.4   | -2.99537 | 455 | 1   | top1  | -2.99537  | 0.00274  | Brain_Hippocampus.nofilter        |
| ENSG00000274667.1   | 15 | 56730610  | 56730611  | -0.003083 | rs17114479 | 3.61  | rs16976982 | 0.02596   | -2.95 | 3.60554  | 275 | 1   | top1  | -3.60554  | 0.000312 | Brain_Hippocampus.nofilter        |
| ENSG00000076344.15  | 16 | 275939    | 275940    | 0.385876  | rs7205963  | -2.64 | rs2685126  | 0.128009  | 4.56  | 2.294    | 339 | 1   | top1  | 2.294     | 0.0218   | Brain_Hippocampus.nofilter        |
| ENSG00000236829.9   | 16 | 382096    | 382097    | 0.136397  | rs7205963  | -2.62 | rs7206751  | -0.002001 | 3.53  | -2.054   | 376 | 8   | enet  | -2.2307   | 0.0257   | Brain_Hippocampus.nofilter        |
| ENSG00000207405.1   | 16 | 1963105   | 1963106   | 0.033829  | rs2064289  | -4.39 | rs36232    | -0.001546 | 2.65  | 2.165    | 442 | 1   | top1  | 2.765     | 0.00569  | Brain_Hippocampus.nofilter        |
| ENSG00000255513.1   | 16 | 1964094   | 1964095   | 0.363478  | rs2064289  | -4.39 | rs338791   | 0.13639   | 5.44  | -3.727   | 442 | 1   | top1  | -3.1267   | 0.00177  | Brain_Hippocampus.nofilter        |
| ENSG00000140988.15  | 16 | 1964859   | 1964860   | 0.059497  | rs2064289  | -4.39 | rs17602    | 0.068761  | 4.03  | -2.539   | 441 | 1   | top1  | -2.5388   | 0.0111   | Brain_Hippocampus.nofilter        |
| ENSG00000127554.12  | 16 | 1984246   | 1984207   | 0.111307  | rs8058190  | 4.38  | rs8045887  | 0.03421   | 3.94  | -3.783   | 431 | 5   | lasso | -4.7222   | 7.74E-06 | Brain_Hippocampus.nofilter        |
| ENSG00000127561.14  | 16 | 1989659   | 1989660   | 0.058342  | rs8058190  | 4.38  | rs2516737  | 0.035636  | 3.52  | 2.689    | 422 | 1   | top1  | 2.6887    | 0.00717  | Brain_Hippocampus.nofilter        |
| ENSG00000103197.16  | 16 | 2047866   | 2047867   | 0.046383  | rs2667684  | -4.32 | rs34973300 | -0.005369 | -3.02 | -2.313   | 387 | 2   | lasso | 2.1862    | 0.0288   | Brain_Hippocampus.nofilter        |
| ENSG00000260447.1   | 16 | 2119206   | 2119207   | -0.008924 | rs8055439  | -4.29 | rs13331781 | 0.006901  | -1.98 | -2.42    | 365 | 1   | top1  | 2.42      | 0.0155   | Brain_Hippocampus.nofilter        |
| ENSG00000131653.12  | 16 | 2155697   | 2155698   | 0.096476  | rs8058190  | 4.3   | rs8053843  | 0.074516  | 3.76  | -3.723   | 351 | 1   | top1  | -3.723    | 0.000197 | Brain_Hippocampus.nofilter        |
| ENSG00000159723.4   | 16 | 67483812  | 67483813  | -0.026453 | rs1152084  | -2.37 | rs4783585  | 0.006938  | 2.13  | -2.145   | 212 | 1   | top1  | -2.145    | 0.032    | Brain_Hippocampus.nofilter        |
| ENSG00000168792.4   | 17 | 29567136  | 29567137  | 0.12878   | rs877492   | -2.58 | rs3110496  | -0.006756 | 2.89  | 1.651    | 314 | 4   | lasso | 2.193     | 0.0283   | Brain_Hippocampus.nofilter        |
| ENSG00000175906.4   | 17 | 43398958  | 43398959  | 0.063686  | rs575873   | 2.56  | rs575873   | 0.014684  | -3.22 | 2.561    | 310 | 1   | top1  | -2.561    | 0.0104   | Brain_Hippocampus.nofilter        |
| ENSG000000087191.12 | 17 | 63827671  | 63827672  | 0.216131  | rs4465659  | 2.41  | rs2854160  | 0.04956   | 4.65  | 2.108    | 326 | 326 | susie | 2.084     | 0.0372   | Brain_Hippocampus.nofilter        |
| ENSG00000259436.1   | 19 | 42152568  | 42152569  | 0.084578  | rs4803522  | 2.4   | rs1076976  | -0.00425  | -3.15 | 2.087    | 199 | 1   | lasso | -2.087    | 0.03689  | Brain_Hippocampus.nofilter        |
| ENSG00000268516.2   | 19 | 58278807  | 58278808  | 0.041198  | rs260461   | 3.51  | rs260444   | -0.00597  | -2.92 | 1.9493   | 345 | 345 | susie | -2.1197   | 0.03403  | Brain_Hippocampus.nofilter        |
| ENSG00000278129.1   | 19 | 58278950  | 58278951  | 0.186448  | rs260461   | 3.51  | rs260471   | -0.004    | -3.33 | 2.6084   | 345 | 12  | enet  | -2.0374   | 0.04161  | Brain_Hippocampus.nofilter        |
| ENSG00000121410.11  | 19 | 58353498  | 58353499  | 0.01171   | rs260461   | 3.51  | rs1265957  | -0.00398  | -2.78 | 2.551    | 320 | 320 | susie | -2.5168   | 0.01184  | Brain_Hippocampus.nofilter        |
| ENSG00000268049.1   | 19 | 58358689  | 58358690  | -0.041416 | rs260461   | 3.51  | rs1265960  | -0.00353  | -2.67 | 2.1197   | 320 | 1   | lasso | -2.1197   | 0.03403  | Brain_Hippocampus.nofilter        |
| ENSG00000268307.1   | 19 | 58400220  | 58400221  | 0.036506  | rs260461   | 3.54  | rs157360   | 0.057     | -3.12 | -2.637   | 308 | 1   | top1  | 2.637     | 0.00836  | Brain_Hippocampus.nofilter        |
| ENSG00000243491.1   | 2  | 9770341   | 9770342   | -0.036899 | rs3762535  | 3.03  | rs908296   | 0.00029   | -3.04 | -2.071   | 488 | 1   | lasso | 2.071     | 0.03836  | Brain_Hippocampus.nofilter        |
| ENSG00000162981.13  | 2  | 14632685  | 14632686  | 0.229035  | rs1434977  | -2.61 | rs2714298  | 0.0074    | 3.53  | 1.2721   | 475 | 475 | susie | -2.117    | 0.03426  | Brain_Hippocampus.nofilter        |
| ENSG00000119782.13  | 2  | 24049700  | 24049701  | 0.054295  | rs1991083  | -3.42 | rs2584928  | -0.00193  | -2.85 | -0.64282 | 331 | 331 | susie | -2.7404   | 0.00614  | Brain_Hippocampus.nofilter        |
| ENSG00000271936.1   | 2  | 24825609  | 24825610  | 0.198965  | rs7594432  | -2.66 | rs13401241 | 0.00571   | 3.19  | -2.32413 | 313 | 1   | top1  | -2.3241   | 0.02012  | Brain_Hippocampus.nofilter        |
| ENSG00000276334.1   | 2  | 32521926  | 32521927  | 0.21856   | rs10181198 | -2.62 | rs762019   | 0.0412    | -5.51 | -2.216   | 374 | 14  | enet  | 2.1507    | 0.       |                                   |



|                     |    |           |           |           |            |       |             |           |        |          |     |     |       |           |          |                             |
|---------------------|----|-----------|-----------|-----------|------------|-------|-------------|-----------|--------|----------|-----|-----|-------|-----------|----------|-----------------------------|
| ENSG00000182389.19  | 2  | 152099474 | 152099475 | 0.027421  | rs11893938 | 2.64  | rs12618445  | -0.000641 | 2.78   | 2.102    | 405 | 2   | lasso | 2.1035    | 0.03542  | Brain_Hippocampus.nofilter  |
| ENSG00000162989.4   | 2  | 154698298 | 154698299 | 0.145031  | rs2053671  | -3.28 | rs765439    | 0.0759    | -4.73  | -2.04842 | 395 | 5   | enet  | 2.5591    | 0.0105   | Brain_Hippocampus.nofilter  |
| ENSG00000136535.14  | 2  | 161416093 | 161416094 | -0.04678  | rs13413741 | -3.03 | rs9287802   | 0.0146    | 1.98   | -2.436   | 366 | 1   | top1  | -2.436    | 0.01485  | Brain_Hippocampus.nofilter  |
| ENSG00000234281.5   | 2  | 210324758 | 210324759 | 0.106969  | rs10174867 | 2.66  | rs10166445  | -0.00118  | -3.84  | 1.927    | 329 | 13  | enet  | -2.0759   | 0.0379   | Brain_Hippocampus.nofilter  |
| ENSG00000272945.1   | 20 | 34286465  | 34286466  | 0.035981  | rs12624640 | 3.21  | rs4911442   | 0.00518   | 2.64   | -2.921   | 301 | 1   | top1  | -2.921    | 0.00349  | Brain_Hippocampus.nofilter  |
| ENSG00000101460.12  | 20 | 34546853  | 34546854  | 0.231487  | rs12624640 | 3.2   | rs2273684   | 0.0436    | 1.1    | 1.104    | 303 | 303 | susie | 1.993     | 0.04629  | Brain_Hippocampus.nofilter  |
| ENSG00000157540.19  | 21 | 37365932  | 37365933  | 0.044248  | rs11088397 | 4.7   | rs1803439   | 0.00459   | 3.17   | 4.201    | 497 | 1   | top1  | 4.201     | 2.66E-05 | Brain_Hippocampus.nofilter  |
| ENSG00000168237.17  | 3  | 52287088  | 52287089  | 0.320206  | rs6774097  | 2.83  | rs11717383  | 0.0794    | 5.09   | -2.58406 | 335 | 335 | susie | -2.53243  | 0.0113   | Brain_Hippocampus.nofilter  |
| ENSG00000114841.17  | 3  | 52316318  | 52316319  | 0.139893  | rs6774097  | 2.84  | rs648514    | 0.0346    | 3.88   | -1.88934 | 352 | 352 | susie | -2.28834  | 0.0221   | Brain_Hippocampus.nofilter  |
| ENSG00000272886.5   | 3  | 53347609  | 53347610  | 0.134817  | rs611914   | -3.36 | rs1038395   | 0.0997    | 3.98   | -2.07788 | 405 | 2   | lasso | -2.26814  | 0.0233   | Brain_Hippocampus.nofilter  |
| ENSG00000184500.14  | 3  | 93974065  | 93974066  | 0.151248  | rs12631264 | 2.3   | rs12631264  | 0.0356    | -3.81  | 2.302    | 167 | 1   | top1  | -2.302    | 0.0213   | Brain_Hippocampus.nofilter  |
| ENSG00000177752.14  | 4  | 44678425  | 44678426  | 0.176175  | rs10517102 | 3.56  | rs11725120  | 0.01855   | 4.09   | -3.073   | 372 | 372 | susie | -2.66505  | 0.0077   | Brain_Hippocampus.nofilter  |
| ENSG00000151806.13  | 4  | 44678556  | 44678557  | 0.383106  | rs10517102 | 3.56  | rs12499960  | 0.224551  | -6.36  | -2.429   | 372 | 372 | susie | 2.49255   | 0.0127   | Brain_Hippocampus.nofilter  |
| ENSG00000170448.11  | 4  | 47914140  | 47914141  | 0.069702  | rs4235151  | 2.75  | rs6857999   | -0.005307 | 3.44   | 1.654    | 412 | 13  | enet  | 2.46371   | 0.0138   | Brain_Hippocampus.nofilter  |
| ENSG00000173542.8   | 4  | 70902325  | 70902326  | 0.247067  | rs11941079 | 4.36  | rs16846228  | 0.005369  | -3.79  | -0.502   | 318 | 318 | susie | 2.09849   | 0.0359   | Brain_Hippocampus.nofilter  |
| ENSG00000248641.1   | 4  | 73098822  | 73098822  | 0.015996  | rs6850122  | -2.58 | rs13136271  | -0.004476 | 2.26   | 1.983    | 313 | 1   | top1  | 1.983     | 0.0474   | Brain_Hippocampus.nofilter  |
| ENSG00000174792.10  | 4  | 75556047  | 75556048  | 0.419997  | rs17220803 | -4.2  | rs2061742   | 0.255487  | 6.29   | 2.6176   | 430 | 4   | lasso | 2.36864   | 0.0179   | Brain_Hippocampus.nofilter  |
| ENSG00000138769.10  | 4  | 75630715  | 75630716  | 0.020177  | rs17220803 | -3.86 | rs2869456   | -0.003315 | 3.01   | -2.83    | 441 | 7   | enet  | -2.66886  | 0.00761  | Brain_Hippocampus.nofilter  |
| ENSG00000138757.14  | 4  | 75724524  | 75724525  | 0.15186   | rs7685696  | 5.65  | rs34165603  | 0.039478  | -4.08  | 3.04395  | 459 | 459 | susie | -3.00276  | 0.00268  | Brain_Hippocampus.nofilter  |
| ENSG00000156219.16  | 4  | 76011183  | 76011184  | 0.263641  | rs17236661 | -5.83 | rs6851864   | 0.038614  | -3.74  | -1.7685  | 471 | 471 | susie | 2.58259   | 0.00981  | Brain_Hippocampus.nofilter  |
| ENSG00000169248.12  | 4  | 76041414  | 76041415  | 0.030353  | rs17236661 | -5.83 | rs7655536   | -0.005396 | 3.2    | 4.032    | 484 | 5   | lasso | 4.73808   | 2.16E-06 | Brain_Hippocampus.nofilter  |
| ENSG00000189157.13  | 4  | 76214039  | 76214040  | 0.561395  | rs17236661 | -5.83 | rs1876539   | 0.365819  | -7.5   | 4.51021  | 482 | 1   | top1  | -4.51021  | 6.48E-06 | Brain_Hippocampus.nofilter  |
| ENSG00000281731.2   | 4  | 118685340 | 118685341 | 0.353479  | rs4834755  | 3.12  | rs12509236  | 0.106474  | 5.88   | 2.17247  | 347 | 347 | susie | 2.08213   | 0.0373   | Brain_Hippocampus.nofilter  |
| ENSG00000183666.16  | 5  | 21341832  | 21341833  | 0.355322  | rs7717426  | 2.81  | rs1586826   | 0.141425  | 5.25   | 2.1987   | 255 | 1   | top1  | 2.1987    | 0.0279   | Brain_Hippocampus.nofilter  |
| ENSG00000145730.20  | 5  | 102753980 | 102753981 | 0.186763  | rs17154942 | -3.46 | rs34823     | 0.085223  | 4.44   | -3.433   | 304 | 304 | susie | -2.738    | 0.00618  | Brain_Hippocampus.nofilter  |
| ENSG00000175749.11  | 5  | 103032375 | 103032376 | 0.121637  | rs2288788  | -3.7  | rs10463988  | 0.108745  | 4.54   | -2.515   | 307 | 1   | top1  | -2.515    | 0.0119   | Brain_Hippocampus.nofilter  |
| ENSG00000196787.3   | 6  | 27133041  | 27133042  | 0.066906  | rs2393929  | -4.18 | rs12190473  | -0.006752 | 2.992  | 1.2974   | 321 | 321 | susie | 2.3104    | 0.0209   | Brain_Hippocampus.nofilter  |
| ENSG00000112812.15  | 6  | 27247700  | 27247701  | -0.015535 | rs2393929  | -4.18 | rs16867886  | 0.029145  | 2.105  | -2.983   | 337 | 1   | top1  | -2.983    | 0.00285  | Brain_Hippocampus.nofilter  |
| ENSG000001124613.8  | 6  | 27374614  | 27374615  | 0.28254   | rs6918131  | -4.23 | rs6920362   | 0.097588  | -5.008 | -4.114   | 394 | 394 | susie | 4.2139    | 2.51E-05 | Brain_Hippocampus.nofilter  |
| ENSG00000271755.1   | 6  | 27406963  | 27406964  | 0.182253  | rs6918131  | -4.23 | rs6936999   | 0.065637  | -4.125 | -2.4804  | 407 | 19  | enet  | 3.055     | 0.00225  | Brain_Hippocampus.nofilter  |
| ENSG00000263426.2   | 6  | 28977474  | 28977475  | -0.009172 | rs4713216  | -4.27 | rs4713216   | -0.003104 | 1.755  | 2.37     | 13  | 1   | top1  | 2.37      | 0.0178   | Brain_Hippocampus.nofilter  |
| ENSG00000204657.3   | 6  | 29587454  | 29587455  | -0.022307 | rs4713216  | 2.37  | rs4713216   | 0.025098  | -2.284 | 2.37     | 41  | 1   | lasso | -2.37     | 0.0178   | Brain_Hippocampus.nofilter  |
| ENSG00000278254.4   | 7  | 9189856   | 9189857   | 0.11049   | rs10232114 | 2.87  | rs12702844  | 0.00525   | 3.67   | -1.6642  | 650 | 3   | lasso | -2.1074   | 0.03508  | Brain_Hippocampus.nofilter  |
| ENSG00000188185.11  | 7  | 39733631  | 39733632  | 0.143303  | rs17171597 | -3.15 | rs6956681   | 0.00218   | 3.27   | 1.861    | 354 | 16  | enet  | 2.0734    | 0.03814  | Brain_Hippocampus.nofilter  |
| ENSG00000214652.5   | 7  | 64045462  | 64045463  | 0.053066  | rs10274542 | 3.05  | rs13228852  | 2.84E-05  | -3.01  | 1.687    | 226 | 3   | lasso | -1.9706   | 0.04877  | Brain_Hippocampus.nofilter  |
| ENSG00000196313.11  | 7  | 72879364  | 72879365  | 0.292552  | rs17339199 | -2.24 | rs10233681  | 0.0298    | 4.27   | -1.6814  | 112 | 16  | enet  | -1.9796   | 0.04775  | Brain_Hippocampus.nofilter  |
| ENSG00000170381.12  | 7  | 83649009  | 83649010  | -0.062591 | rs3094463  | -2.31 | rs25222330  | 0.00453   | -2.7   | -2.305   | 510 | 1   | top1  | 2.305     | 0.02117  | Brain_Hippocampus.nofilter  |
| ENSG00000176402.5   | 7  | 99929390  | 99929391  | 0.096192  | rs1419745  | -2.29 | rs800672    | 0.0227    | 3.57   | -1.7261  | 267 | 6   | lasso | -2.0312   | 0.04224  | Brain_Hippocampus.nofilter  |
| ENSG00000184903.9   | 7  | 111562516 | 111562517 | 0.139379  | rs214456   | -3.34 | rs2613596   | 0.0386    | -4.22  | -2.3448  | 317 | 317 | susie | 3.1684    | 0.00153  | Brain_Hippocampus.nofilter  |
| ENSG00000273419.1   | 7  | 149860381 | 149860382 | 0.067584  | rs757725   | 2.94  | rs4725315   | -0.00629  | 3.04   | -0.674   | 264 | 22  | enet  | -2.1514   | 0.03144  | Brain_Hippocampus.nofilter  |
| ENSG00000260398.1   | 8  | 78605951  | 78605952  | 0.2456    | rs16919538 | 3.73  | rs6990845   | 0.121     | 5.33   | 2.598    | 328 | 9   | lasso | 3.0851    | 0.00203  | Brain_Hippocampus.nofilter  |
| ENSG00000254231.1   | 8  | 86343313  | 86343314  | -0.022119 | rs4961216  | 3.2   | rs11987550  | 0.0169    | 3.1    | 1.741    | 404 | 5   | lasso | 2.4349    | 0.0149   | Brain_Hippocampus.nofilter  |
| ENSG00000104375.15  | 8  | 98942826  | 98942827  | 0.036221  | rs7008093  | -2.49 | rs12679734  | -0.00386  | 2.46   | -1.979   | 260 | 1   | lasso | -1.979    | 0.04782  | Brain_Hippocampus.nofilter  |
| ENSG000000048392.11 | 8  | 102239117 | 102239118 | 0.248131  | rs6935     | -3.09 | rs1037698   | -0.00605  | -3.81  | 1.995    | 492 | 7   | lasso | -2.0461   | 0.04074  | Brain_Hippocampus.nofilter  |
| ENSG00000174482.10  | 9  | 28670285  | 28670286  | 0.113796  | rs10968555 | 3.72  | rs10123691  | -0.00604  | 2.88   | 2.735    | 524 | 3   | lasso | 2.970907  | 0.00297  | Brain_Hippocampus.nofilter  |
| ENSG00000135018.13  | 9  | 83708202  | 83708203  | 0.122945  | rs1246326  | -2.98 | rs12001341  | -0.00596  | -3.17  | 1.916    | 524 | 524 | susie | -2.040873 | 0.04126  | Brain_Hippocampus.nofilter  |
| ENSG00000142765.17  | 1  | 27342019  | 27342020  | 0.100505  | rs1997757  | 2.29  | rs12565684  | -0.00571  | 2.6    | -1.045   | 233 | 233 | susie | -2.51018  | 0.01207  | Brain_Hypothalamus.nofilter |
| ENSG00000143256.4   | 1  | 161118084 | 161118085 | -0.012346 | rs1801274  | -4.09 | rs4657015   | -0.00647  | 3.04   | 2.205    | 400 | 2   | enet  | 2.19307   | 0.0283   | Brain_Hypothalamus.nofilter |
| ENSG00000158882.14  | 1  | 161225938 | 161225939 | -0.070991 | rs1801274  | -4.09 | rs4656308   | 0.0205    | 3.38   | -2.0052  | 406 | 1   | top1  | -2.00521  | 0.04494  | Brain_Hypothalamus.nofilter |
| ENSG00000143811.18  | 1  | 225924339 | 225924340 | 0.006482  | rs10753410 | 2.83  | rs1219671   | 0.00773   | 2.64   | -2.646   | 373 | 1   | top1  | -2.646    | 0.00814  | Brain_Hypothalamus.nofilter |
| ENSG00000236031.1   | 1  | 243545597 | 243545598 | 0.010393  | rs10927035 | 4.34  | rs121210901 | -0.00208  | -3.04  | -0.758   | 299 | 3   | lasso | 2.0194    | 0.04345  | Brain_Hypothalamus.nofilter |
| ENSG00000215146.4   | 10 | 42367973  | 42367974  | 0.603731  | rs209385   | 3.09  | rs7086623   | 0.32649   | 7.99   | 2.369    | 182 | 16  | enet  | 2.0693    | 0.03851  | Brain_Hypothalamus.nofilter |
| ENSG00000198964.13  | 10 | 50624949  | 50624950  | 0.14116   | rs2339624  | 3.35  | rs2983360   | -0.00649  | 3.29   | -1.8389  | 404 | 404 | susie | -2.2505   | 0.02442  | Brain_Hypothalamus.nofilter |
| ENSG00000156026.14  | 10 | 72692130  | 72692131  | 0.03206   | rs11815867 | 2.47  | rs3000969   | -0.00631  | -2.61  | 1.78     | 258 | 258 | susie | -2.2194   | 0.02646  | Brain_Hypothalamus.nofilter |
| ENSG00000107758.15  | 10 | 73496023  | 73496024  | -0.016768 | rs2227564  | -2.94 | rs4746162   | -0.0047   | -2.33  | -2.793   | 240 | 1   | lasso | 2.793     | 0.00522  | Brain_Hypothalamus.nofilter |
| ENSG00000184014.7   | 11 | 9265389   | 9265390   | -0.049628 | rs10770008 | 2.37  | rs4282978   | 0.012366  | 1.91   | -2.027   | 375 | 1   | top1  | -2.027    | 0.0427   | Brain_Hypothalamus.nofilter |
| ENSG00000176102.11  | 11 | 33162370  | 33162371  | -0.019071 | rs7107642  | 2.63  | rs7102857   | 0.010615  | -2.22  | 2.2118   | 317 | 1   | top1  | -2.2118   | 0.027    | Brain_Hypothalamus.nofilter |
| ENSG00000004700.15  | 12 | 21501668  | 21501669  | 0.0644    | rs7311964  | 2.58  | rs991262    | -0.004858 | -3.3   | -1.2836  | 543 | 543 | susie | 2.07493   | 0.038    | Brain_Hypothalamus.nofilter |
| ENSG000000066084.12 | 12 | 50505106  | 50505107  | 0.12034   | rs10783342 | 2.99  | rs861204    | 0.044686  | 4.15   | 1.3148   | 296 | 5   | lasso | 2.32877   | 0.0199   | Brain_Hypothalamus.nofilter |
| ENSG00000205056.8   | 12 | 92466450  | 92466451  | -0.064127 | rs2120576  | 2.96  | rs17790310  | 0.013739  | -2.99  | 2.123    | 463 | 1   | lasso | -2.123    | 0.0338   | Brain_Hypothalamus.nofilter |
| ENSG00000166130.14  | 12 | 98645112  | 98645113  | 0.257676  | rs17028572 | 2.98  | rs12581119  | 0.216349  | -5.94  | 2.788    | 443 | 1   | top1  | 2.788     | 0.0053   | Brain_Hypothalamus.nofilter |
| ENSG00000120662.15  | 13 | 41263576  | 41263577  | -0.017761 | rs9562278  | 3.13  | rs7989372   | 0.036382  | -3.14  | 2.137    | 343 | 1   | lasso | -2.137    | 0.03259  | Brain_Hypothalamus.nofilter |
| ENSG00000102595.19  | 13 | 96053481  | 96053482  | 0.050759  | rs1010345  | 3.22  | rs16953447  | -0.003885 | -2.95  | -0.883   | 325 | 325 | susie | 2.643     | 0.00822  | Brain_Hypothalamus.nofilter |
| ENSG00000165621.8   | 13 | 96994729  | 96994730  | 0.322416  | rs4771267  | 3.7   | rs4771972   | 0.206861  | 5.89   | 2.213    | 354 | 1   | top1  |           |          |                             |

|                    |    |           |           |           |            |       |            |           |       |          |     |     |       |          |          |                             |
|--------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|-------|----------|-----|-----|-------|----------|----------|-----------------------------|
| ENSG00000258867.5  | 14 | 88024549  | 88024550  | 0.066064  | rs10142115 | 3.49  | rs8007637  | 0.000922  | 3.27  | 2.13     | 463 | 1   | top1  | 2.13     | 0.03317  | Brain_Hypothalamus.nofilter |
| ENSG00000276524.1  | 15 | 56887924  | 56887925  | 0.007295  | rs1711479  | 3.61  | rs8023672  | 0.02336   | -3.05 | 2.1332   | 323 | 1   | top1  | -2.1332  | 0.032908 | Brain_Hypothalamus.nofilter |
| ENSG00000259616.2  | 15 | 61635448  | 61635449  | 0.062545  | rs2243453  | -5.12 | rs11854281 | 0.05012   | -3.93 | -4.229   | 550 | 2   | lasso | 4.2058   | 2.60E-05 | Brain_Hypothalamus.nofilter |
| ENSG00000162039.14 | 16 | 1872177   | 1872178   | 0.087954  | rs2064289  | -4.36 | rs173164   | 0.02507   | -4.38 | -3.5987  | 449 | 449 | susie | 3.69084  | 0.000224 | Brain_Hypothalamus.nofilter |
| ENSG00000255513.1  | 16 | 1964094   | 1964095   | 0.428308  | rs2064289  | -4.39 | rs338791   | 0.30007   | 7.02  | -3.1267  | 441 | 2   | lasso | -3.18109 | 0.00147  | Brain_Hypothalamus.nofilter |
| ENSG00000065054.13 | 16 | 2025355   | 2025356   | -0.04893  | rs2667684  | -4.39 | rs8045887  | -0.00432  | 3.29  | -3.8472  | 397 | 4   | enet  | -4.04553 | 5.22E-05 | Brain_Hypothalamus.nofilter |
| ENSG00000103197.16 | 16 | 2047866   | 2047867   | 0.023422  | rs2667684  | -4.32 | rs28396225 | 0.00188   | -2.73 | -3.3498  | 386 | 1   | lasso | 3.34981  | 0.000809 | Brain_Hypothalamus.nofilter |
| ENSG00000261123.1  | 16 | 2097025   | 2097026   | 0.045821  | rs2667684  | -4.32 | rs12918803 | -0.0063   | 2.51  | 0.1087   | 369 | 369 | susie | 2.88587  | 0.0039   | Brain_Hypothalamus.nofilter |
| ENSG00000008710.19 | 16 | 2135897   | 2135898   | 0.013741  | rs8058190  | 4.35  | rs13333329 | 0.02852   | -2.34 | -2.3514  | 357 | 1   | top1  | 2.35138  | 0.0187   | Brain_Hypothalamus.nofilter |
| ENSG00000167964.12 | 16 | 2140802   | 2140803   | -0.016691 | rs8058190  | 4.35  | rs13333329 | 0.01798   | 3.19  | -2.3514  | 357 | 1   | lasso | -2.35138 | 0.0187   | Brain_Hypothalamus.nofilter |
| ENSG00000276408.1  | 16 | 75556391  | 75556392  | -0.014087 | rs150888   | -2.47 | rs160964   | 0.00864   | 2.2   | -2.409   | 367 | 1   | top1  | -2.409   | 0.016    | Brain_Hypothalamus.nofilter |
| ENSG00000168792.4  | 17 | 29567136  | 29567137  | -0.021933 | rs877492   | -2.58 | rs497993   | 0.003193  | 2.89  | 1.961    | 314 | 1   | top1  | 1.961    | 0.0499   | Brain_Hypothalamus.nofilter |
| ENSG00000273576.1  | 17 | 39566914  | 39566915  | 0.06586   | rs4252607  | 3.04  | rs3152     | -0.005263 | 2.71  | 1.1641   | 351 | 351 | susie | 1.96619  | 0.0493   | Brain_Hypothalamus.nofilter |
| ENSG00000136485.14 | 17 | 63550460  | 63550461  | 0.225506  | rs4465659  | 2.41  | rs8075924  | 0.000668  | 3.4   | -0.67706 | 271 | 17  | enet  | -2.26313 | 0.0236   | Brain_Hypothalamus.nofilter |
| ENSG00000136490.8  | 17 | 63700684  | 63700685  | 0.026769  | rs8078549  | 2.52  | rs9890263  | 0.005093  | -2.72 | 2.2766   | 301 | 1   | lasso | -2.2766  | 0.0228   | Brain_Hypothalamus.nofilter |
| ENSG00000279369.1  | 17 | 63700846  | 63700847  | 0.135025  | rs8078549  | 2.52  | rs2727280  | -0.004092 | 2.93  | 1.91     | 301 | 301 | susie | 2.47056  | 0.0135   | Brain_Hypothalamus.nofilter |
| ENSG00000167220.11 | 18 | 47150519  | 47150520  | 0.006533  | rs4624285  | -2.8  | rs16950348 | 0.05072   | 3.16  | 2.4792   | 469 | 1   | top1  | 2.4792   | 0.0132   | Brain_Hypothalamus.nofilter |
| ENSG00000104866.10 | 19 | 45091791  | 45091792  | 0.03158   | rs11883302 | 2.97  | rs12460756 | -0.00517  | 3.41  | -1.2136  | 371 | 16  | enet  | -2.3276  | 0.0199   | Brain_Hypothalamus.nofilter |
| ENSG00000268201.1  | 19 | 58266634  | 58266635  | -0.030263 | rs260461   | 3.5   | rs260419   | 0.09974   | -2.36 | 2.38     | 352 | 1   | top1  | -2.38    | 0.0173   | Brain_Hypothalamus.nofilter |
| ENSG00000119782.13 | 2  | 24049700  | 24049701  | 0.048711  | rs1991083  | -3.42 | rs6544949  | 0.000806  | 2.85  | -2.092   | 332 | 2   | lasso | -2.0812  | 0.03742  | Brain_Hypothalamus.nofilter |
| ENSG00000176732.6  | 2  | 24123476  | 24123477  | 0.084121  | rs1991083  | -3.39 | rs2303287  | 0.00939   | 3.6   | -2.02369 | 304 | 3   | lasso | -2.2621  | 0.02369  | Brain_Hypothalamus.nofilter |
| ENSG00000271228.1  | 2  | 32013060  | 32013061  | 0.025108  | rs10181198 | -2.62 | rs6752375  | 0.000282  | -3.99 | 2.08673  | 264 | 1   | top1  | -2.0867  | 0.03691  | Brain_Hypothalamus.nofilter |
| ENSG00000115380.19 | 2  | 55924138  | 55924139  | 0.093541  | rs6545522  | 3.38  | rs12464737 | 0.00376   | 2.2   | 2.91216  | 466 | 1   | top1  | 2.9122   | 0.00359  | Brain_Hypothalamus.nofilter |
| ENSG00000233723.7  | 2  | 58427798  | 58427799  | 0.089672  | rs4233972  | 2.65  | rs11125762 | 0.00617   | 2.91  | -1.732   | 363 | 3   | lasso | -2.3659  | 0.01798  | Brain_Hypothalamus.nofilter |
| ENSG00000212978.6  | 2  | 61144968  | 61144969  | 0.012825  | rs778755   | 3.63  | rs12613627 | -0.00619  | 2.87  | -2.122   | 314 | 314 | susie | -2.2577  | 0.02396  | Brain_Hypothalamus.nofilter |
| ENSG00000115464.14 | 2  | 61470768  | 61470769  | 0.051921  | rs778755   | 3.69  | rs4671400  | -0.00387  | -3.01 | 2.482    | 299 | 1   | lasso | -2.482   | 0.01306  | Brain_Hypothalamus.nofilter |
| ENSG00000270820.5  | 2  | 61471187  | 61471188  | 0.1189    | rs778755   | 3.69  | rs4378794  | 0.0183    | -3.84 | 3.019    | 299 | 1   | top1  | -3.019   | 0.00254  | Brain_Hypothalamus.nofilter |
| ENSG00000115593.14 | 2  | 88067779  | 88067780  | -0.019428 | rs6712707  | -2.94 | rs2176569  | -0.00631  | -2.71 | -2.559   | 282 | 2   | lasso | 2.5592   | 0.01049  | Brain_Hypothalamus.nofilter |
| ENSG00000163586.9  | 2  | 88128115  | 88128116  | 0.725231  | rs6712707  | -2.94 | rs2919872  | 0.373     | -8.06 | 1.62137  | 256 | 256 | susie | -2.3881  | 0.01693  | Brain_Hypothalamus.nofilter |
| ENSG00000230006.7  | 2  | 88765806  | 88765807  | 0.131448  | rs6712707  | -2.94 | rs1016839  | 0.0108    | -3.25 | 2.653    | 163 | 163 | susie | -1.9886  | 0.04674  | Brain_Hypothalamus.nofilter |
| ENSG00000213355.3  | 2  | 94737336  | 94737337  | 0.017724  | rs3113002  | -3.29 | rs872580   | -0.0059   | 2.54  | -2.99382 | 63  | 2   | lasso | -3.0275  | 0.00247  | Brain_Hypothalamus.nofilter |
| ENSG00000213225.7  | 2  | 130229378 | 130229379 | 0.078592  | rs4470286  | 2.65  | rs10198499 | 0.0318    | -3.72 | -1.466   | 147 | 147 | susie | 2.0624   | 0.03917  | Brain_Hypothalamus.nofilter |
| ENSG00000173302.5  | 2  | 130729069 | 130729070 | 0.001824  | rs6721186  | 2.58  | rs16856298 | 0.00125   | -2.17 | 2.36388  | 171 | 1   | top1  | -2.3639  | 0.01808  | Brain_Hypothalamus.nofilter |
| ENSG00000182389.19 | 2  | 152099474 | 152099475 | 0.052598  | rs11893938 | 2.64  | rs1519714  | -0.00238  | 2.44  | -2.25971 | 404 | 1   | top1  | 2.2597   | 0.02384  | Brain_Hypothalamus.nofilter |
| ENSG00000232320.6  | 2  | 161341325 | 161341326 | -0.038511 | rs13413741 | -3.03 | rs13413741 | -8.58E-06 | -2.61 | -3.034   | 377 | 1   | top1  | -3.034   | 0.00241  | Brain_Hypothalamus.nofilter |
| ENSG00000144331.18 | 2  | 179861504 | 179861505 | -0.125834 | rs10497557 | 4.48  | rs17782073 | -0.00638  | -3.17 | -2.042   | 551 | 1   | lasso | 2.042    | 0.04115  | Brain_Hypothalamus.nofilter |
| ENSG00000101460.12 | 20 | 34546853  | 34546854  | 0.178599  | rs12624640 | 3.2   | rs6059880  | 0.02668   | -4.22 | -2.8006  | 303 | 303 | susie | 2.8416   | 0.00449  | Brain_Hypothalamus.nofilter |
| ENSG00000159147.17 | 21 | 33588707  | 33588708  | 0.05158   | rs2298678  | 3.44  | rs915562   | -0.00535  | 2.99  | 0.07903  | 442 | 442 | susie | 2.95166  | 0.00316  | Brain_Hypothalamus.nofilter |
| ENSG00000205726.14 | 21 | 33642399  | 33642400  | 0.151857  | rs8127139  | 3.57  | rs6517178  | 0.06531   | 4.21  | -2.523   | 423 | 6   | lasso | -2.19042 | 0.02849  | Brain_Hypothalamus.nofilter |
| ENSG00000144619.14 | 3  | 2098812   | 2098813   | 0.227642  | rs1178542  | -2.54 | rs8179883  | -0.003358 | 3.55  | -2.1052  | 688 | 29  | enet  | -2.4641  | 0.01374  | Brain_Hypothalamus.nofilter |
| ENSG00000271643.1  | 3  | 33796949  | 33796950  | 0.010822  | rs17031375 | -2.74 | rs981120   | 0.00551   | 3.07  | -2.3621  | 357 | 10  | lasso | -2.2233  | 0.0262   | Brain_Hypothalamus.nofilter |
| ENSG00000170248.13 | 3  | 33798351  | 33798352  | 0.186605  | rs17031375 | -2.74 | rs11129589 | 0.049099  | -4.24 | -2.4245  | 356 | 4   | lasso | 2.2069   | 0.02732  | Brain_Hypothalamus.nofilter |
| ENSG00000242797.3  | 3  | 52299023  | 52299024  | 0.087774  | rs6774097  | 2.84  | rs1060330  | 0.039674  | -3.57 | -2.643   | 346 | 1   | top1  | 2.643    | 0.00822  | Brain_Hypothalamus.nofilter |
| ENSG00000240682.9  | 3  | 129161292 | 129161293 | -4.00E-05 | rs11709852 | 3.14  | rs6785206  | 0.008061  | 2.53  | 2.239    | 306 | 2   | lasso | 2.2394   | 0.02513  | Brain_Hypothalamus.nofilter |
| ENSG00000169714.16 | 3  | 129183921 | 129183922 | 0.011305  | rs11709852 | 3.13  | rs16859047 | -0.006363 | -2.44 | -2.8236  | 306 | 306 | susie | 2.7666   | 0.00566  | Brain_Hypothalamus.nofilter |
| ENSG00000196542.8  | 3  | 161372879 | 161372880 | 0.227425  | rs2404572  | -3.08 | rs1376122  | 0.095449  | 4.83  | 2.54     | 374 | 374 | susie | 1.984    | 0.04725  | Brain_Hypothalamus.nofilter |
| ENSG00000224097.5  | 4  | 39480254  | 39480255  | 0.350496  | rs2566103  | 2.38  | rs13144464 | 0.263506  | 6.48  | 2.205    | 366 | 5   | lasso | 2.0372   | 0.041625 | Brain_Hypothalamus.nofilter |
| ENSG00000249212.1  | 4  | 42029208  | 42029209  | -0.027183 | rs6813397  | -2.99 | rs6827980  | 0.00808   | 2.48  | -2.787   | 419 | 1   | top1  | -2.787   | 0.00532  | Brain_Hypothalamus.nofilter |
| ENSG00000177752.14 | 4  | 44678425  | 44678426  | 0.075405  | rs10517102 | 3.56  | rs990356   | 0.01271   | 3.69  | -2.4251  | 371 | 1   | top1  | -2.4251  | 0.015302 | Brain_Hypothalamus.nofilter |
| ENSG00000163281.11 | 4  | 44726594  | 44726595  | 0.350441  | rs10517102 | 3.33  | rs12499960 | 0.180907  | 5.86  | -2.429   | 374 | 374 | susie | -2.5826  | 0.009805 | Brain_Hypothalamus.nofilter |
| ENSG00000250125.1  | 4  | 65004499  | 65004500  | 0.019377  | rs17086224 | 3.62  | rs7674285  | 0.005246  | 3.13  | 2.2983   | 391 | 1   | top1  | 2.2983   | 0.021546 | Brain_Hypothalamus.nofilter |
| ENSG00000163743.13 | 4  | 75514216  | 75514217  | 0.130231  | rs17220803 | -4.39 | rs2126852  | 0.157788  | 5.11  | -2.13    | 426 | 1   | top1  | -2.13    | 0.033172 | Brain_Hypothalamus.nofilter |
| ENSG00000174792.10 | 4  | 75556047  | 75556048  | 0.114676  | rs17220803 | -4.2  | rs324734   | 0.008528  | 2.99  | 1.4195   | 430 | 430 | susie | 3.5279   | 0.000419 | Brain_Hypothalamus.nofilter |
| ENSG00000138760.9  | 4  | 76234535  | 76234536  | 0.136824  | rs17236661 | -5.83 | rs717239   | 0.042261  | 3.8   | 4.206    | 485 | 1   | top1  | 4.206    | 2.60E-05 | Brain_Hypothalamus.nofilter |
| ENSG00000175749.11 | 5  | 103032375 | 103032376 | 0.189441  | rs2288788  | -3.7  | rs1826673  | 0.0675    | 4.07  | -3.2449  | 307 | 1   | top1  | -3.2449  | 0.00118  | Brain_Hypothalamus.nofilter |
| ENSG00000197948.10 | 5  | 141651418 | 141651419 | 0.064857  | rs251022   | 2.55  | rs10062181 | 0.000133  | 3.29  | 2.0974   | 516 | 25  | enet  | 2.1451   | 0.03195  | Brain_Hypothalamus.nofilter |
| ENSG00000216990.2  | 6  | 87298771  | 87298772  | 0.064352  | rs9444463  | 2.94  | rs2307373  | -0.00648  | 2.88  | 1.736    | 400 | 3   | lasso | 2.2148   | 0.02677  | Brain_Hypothalamus.nofilter |
| ENSG00000112249.13 | 6  | 100881371 | 100881372 | 0.04628   | rs12664423 | -2.52 | rs13210135 | 0.00352   | 3.14  | 2.477    | 304 | 1   | top1  | 2.477    | 0.01325  | Brain_Hypothalamus.nofilter |
| ENSG00000111877.17 | 6  | 118935161 | 118935162 | 0.033786  | rs6932585  | -3.98 | rs902780   | 0.00401   | -3.38 | 3.252    | 382 | 1   | top1  | -3.252   | 0.00115  | Brain_Hypothalamus.nofilter |
| ENSG00000124613.8  | 6  | 27374615  | 27374616  | 0.337968  | rs6918131  | -4.23 | rs6920362  | 0.35075   | -7.45 | -4.114   | 393 | 1   | top1  | 4.114    | 3.89E-05 | Brain_Hypothalamus.nofilter |
| ENSG00000271755.1  | 6  | 27406963  | 27406964  | 0.133361  | rs6918131  | -4.23 | rs6456785  | 0.07617   | -4.28 | -2.682   | 406 | 1   | top1  | 2.682    | 0.00732  | Brain_Hypothalamus.nofilter |
| ENSG00000263426.2  | 6  | 28977474  | 28977475  | -0.012226 | rs4713216  | -2.67 | rs4713216  | -0.00647  | 1.72  | 2.37     | 12  | 1   | enet  | 2.37     | 0.0178   | Brain_Hypothalamus.nofilter |
| ENSG00000197935.6  | 6  | 29005259  | 29005260  | -0.066557 | rs4713216  | 2.37  | rs4713216  | -0.00481  | 1.53  | 2.37     | 3   | 1   | lasso | 2.37     | 0.0178   | Brain_Hypothalamus.nofilter |
| ENSG00000204681.10 | 6  | 29633975  | 29633976  | 0.016711  | rs4713216  | 2.    |            |           |       |          |     |     |       |          |          |                             |

|                     |    |           |           |           |            |           |            |           |       |         |     |     |       |         |         |                                                |
|---------------------|----|-----------|-----------|-----------|------------|-----------|------------|-----------|-------|---------|-----|-----|-------|---------|---------|------------------------------------------------|
| ENSG00000127083.7   | 9  | 92424460  | 92424461  | -0.063912 | rs710161   | 2.44      | rs7033261  | -0.003846 | 3.21  | 2.064   | 377 | 1   | lasso | 2.064   | 0.039   | Brain_Hypothalamus.nofilter                    |
| ENSG00000249087.6   | 1  | 23368996  | 23368997  | 0.093217  | rs17489856 | -2.35     | rs644749   | 0.0491    | -3.61 | -2.051  | 310 | 1   | top1  | 2.051   | 0.0403  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000271420.1   | 1  | 23379028  | 23379029  | 0.023162  | rs17489856 | -2.35     | rs680386   | 0.00391   | -2.36 | -1.9994 | 317 | 1   | top1  | 1.9994  | 0.0456  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000116157.5   | 1  | 52602371  | 52602372  | 0.102402  | rs7518390  | 3.5       | rs835337   | 0.00152   | -3.28 | 0.209   | 299 | 299 | susie | -2.269  | 0.0233  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000272419.6   | 1  | 145216057 | 145216058 | 0.006975  | rs12129861 | -2.45     | rs1298954  | -0.000779 | 1.89  | 2.251   | 8   | 1   | top1  | 2.251   | 0.0244  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000234232.7   | 1  | 149747817 | 149747818 | 0.03668   | rs1105210  | -2.21     | rs3208509  | 0.0205    | -2.58 | -1.9608 | 86  | 1   | top1  | 1.9608  | 0.0499  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000158850.14  | 1  | 161176847 | 161176848 | -0.005988 | rs1801274  | -4.09     | rs4657015  | 7.79E-05  | 2.6   | 2.205   | 374 | 1   | top1  | 2.205   | 0.0275  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000158859.9   | 1  | 161199055 | 161199056 | 0.160614  | rs1801274  | -4.09     | rs507260   | -0.00448  | 3.26  | -2.321  | 377 | 3   | lasso | -2.5033 | 0.0123  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000236905.2   | 1  | 52824026  | 52824027  | -0.027669 | rs10779598 | -0.027669 | rs903803   | -0.00552  | -3.05 | -1.658  | 416 | 10  | enet  | 2.123   | 0.0338  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000242861.1   | 1  | 225841186 | 225841187 | 0.123194  | rs10753410 | 2.83      | rs9919303  | 0.0179    | -3.45 | -0.7384 | 389 | 6   | lasso | 1.9874  | 0.0469  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000279623.1   | 10 | 21865920  | 21865921  | -0.017935 | rs34600782 | -2.52     | rs11012933 | 0.00377   | -3.31 | -2.392  | 189 | 1   | top1  | 2.392   | 0.0168  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000226200.6   | 10 | 50624986  | 50624987  | 0.286397  | rs2339624  | 3.36      | rs12358192 | 0.0521    | -4.23 | -2.429  | 413 | 1   | top1  | 2.4289  | 0.0151  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000232706.3   | 10 | 50676742  | 50676743  | 0.114025  | rs2339624  | 3.35      | rs11006358 | 0.0942    | -4.49 | -2.124  | 436 | 1   | top1  | 2.1237  | 0.0337  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000272630.1   | 10 | 73101296  | 73101297  | 0.000232  | rs16930168 | 2.38      | rs16930168 | 0.00344   | 1.91  | 2.382   | 219 | 1   | top1  | 2.382   | 0.0172  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000254860.5   | 11 | 89647773  | 89647774  | 0.651109  | rs3365     | -2.68     | rs3815991  | 0.299997  | 8.31  | -1.7274 | 359 | 359 | susie | -2.0071 | 0.0447  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000110422.11  | 11 | 33256671  | 33256672  | 0.045933  | rs7107642  | 2.59      | rs7944652  | 0.00966   | 2.91  | 2.2336  | 370 | 3   | lasso | 2.2336  | 0.0255  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000135373.12  | 11 | 34621092  | 34621093  | -0.016084 | rs353587   | 3.44      | rs353582   | 0.012534  | 2.68  | 2.309   | 639 | 1   | top1  | 2.309   | 0.0209  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000255139.1   | 11 | 59616428  | 59616429  | 0.101443  | rs17154165 | 3.44      | rs6591541  | 0.034261  | 4.02  | 3.0509  | 334 | 10  | enet  | 2.3065  | 0.0211  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000255501.1   | 11 | 105139725 | 105139726 | 0.154517  | rs2513269  | -2.68     | rs7130632  | 0.06891   | -4.52 | 2.153   | 338 | 5   | lasso | -2.4974 | 0.0125  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000139131.12  | 12 | 32755901  | 32755902  | 0.063482  | rs11830829 | -4.22     | rs12368488 | 0.002332  | -2.73 | -3.654  | 488 | 3   | lasso | 3.2484  | 0.00116 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000273853.1   | 12 | 33432852  | 33432853  | 0.180221  | rs11830829 | -4.22     | rs2171534  | 0.018701  | 3.88  | -1.7858 | 376 | 37  | enet  | -2.4844 | 0.01298 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000273015.2   | 12 | 45277774  | 45277775  | 0.196528  | rs7134559  | -4.57     | rs7468599  | -0.005382 | -3.06 | -2.749  | 390 | 390 | susie | 3.0786  | 0.00208 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000066084.12  | 12 | 50505106  | 50505107  | 0.156501  | rs10783342 | 2.99      | rs10747586 | 0.079508  | 4.56  | 2.076   | 296 | 1   | top1  | 2.076   | 0.03789 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000165621.8   | 13 | 96994729  | 96994730  | 0.111512  | rs4771267  | 3.7       | rs1933009  | 0.104322  | 4.65  | 2.035   | 358 | 2   | lasso | 2.1086  | 0.035   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000258548.5   | 14 | 27612587  | 27612588  | 0.106843  | rs8016862  | 3.24      | rs1969963  | 0.0801    | -4.32 | 2.151   | 339 | 1   | top1  | 2.1508  | 0.0315  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000100934.14  | 14 | 39109645  | 39109646  | 0.077187  | rs17693279 | 3.41      | rs10047876 | 0.00972   | -3.06 | 2.701   | 356 | 3   | lasso | -2.6306 | 0.00852 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000150527.16  | 14 | 39265283  | 39265284  | 0.056149  | rs17693279 | 3.53      | rs17769363 | -0.00327  | -2.8  | 2.247   | 375 | 1   | top1  | 2.247   | 0.02464 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000165502.6   | 14 | 49620684  | 49620685  | 0.406378  | rs8021453  | 2.85      | rs7146248  | 0.274     | -7.14 | 2.194   | 380 | 4   | lasso | -2.1727 | 0.02981 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000100614.17  | 14 | 60245751  | 60245752  | 0.095571  | rs10151922 | 2.71      | rs1887104  | 0.033     | 4.38  | 2.31    | 282 | 8   | enet  | 2.7722  | 0.00557 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG000000054983.16 | 14 | 87993664  | 87993665  | 0.113965  | rs10142115 | 3.49      | rs979812   | 0.00866   | 3.9   | 1.981   | 457 | 1   | top1  | 1.9805  | 0.04765 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000258789.1   | 14 | 88551596  | 88551597  | 0.138049  | rs17125093 | -3.09     | rs7144459  | -0.00441  | -3.46 | -1      | 453 | 453 | susie | 2.3081  | 0.021   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000283891.1   | 15 | 55373033  | 55373034  | 0.056376  | rs16975936 | 2.83      | rs17818867 | -0.005428 | 3.07  | 1.285   | 424 | 424 | susie | 2.1594  | 0.0308  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000076344.15  | 16 | 275939    | 275940    | 0.1347    | rs7205963  | -2.64     | rs2685126  | 0.077228  | 5.02  | 2.294   | 339 | 339 | susie | 2.3004  | 0.02142 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000140990.14  | 16 | 1959507   | 1959508   | 0.280517  | rs2064289  | -4.39     | rs7343850  | 0.006567  | 3.74  | -2.8338 | 445 | 16  | enet  | -2.4782 | 0.0132  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000255513.1   | 16 | 1964094   | 1964095   | 0.539901  | rs2064289  | -4.39     | rs338791   | 0.224149  | 7.22  | -3.1267 | 445 | 7   | lasso | -3.1849 | 0.00143 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000127554.12  | 16 | 1984206   | 1984207   | 0.290051  | rs8058190  | 4.38      | rs1058474  | 0.112536  | 5.39  | -1.9775 | 434 | 7   | lasso | -2.9746 | 0.00293 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000065054.13  | 16 | 2025355   | 2025356   | 0.095658  | rs2667684  | -4.32     | rs9927202  | -0.001229 | -2.9  | -1.305  | 401 | 7   | lasso | 2.0529  | 0.04009 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000260447.1   | 16 | 2119206   | 2119207   | 0.007876  | rs8055439  | -4.29     | rs36227    | 0.005001  | -2.86 | 2.499   | 368 | 1   | lasso | -2.499  | 0.01245 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000150394.13  | 16 | 62037034  | 62037035  | 0.134546  | rs12598341 | -2.39     | rs8060035  | -0.003384 | 3.37  | 1.882   | 365 | 365 | susie | 3.036   | 0.0024  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000168792.4   | 17 | 29567136  | 29567137  | 0.191918  | rs877492   | -2.58     | rs497993   | 0.070421  | 4.95  | 1.961   | 315 | 9   | enet  | 2.1664  | 0.0303  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000186496.10  | 18 | 35377336  | 35377337  | 0.130585  | rs4145318  | 3.24      | rs3937008  | 0.00965   | 3.38  | -2.64   | 388 | 1   | top1  | -2.64   | 0.00829 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000268201.1   | 19 | 58266634  | 58266635  | 0.033288  | rs260461   | 3.5       | rs260428   | -0.00393  | 2.99  | 3.221   | 352 | 2   | lasso | 3.2212  | 0.00128 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000268516.2   | 19 | 58278807  | 58278808  | 0.098987  | rs260461   | 3.51      | rs260452   | 0.054621  | 3.84  | -2.348  | 348 | 1   | top1  | -2.348  | 0.01887 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000138092.10  | 2  | 24793382  | 24793383  | 0.019904  | rs7594432  | -2.66     | rs11677670 | -0.00156  | 2.92  | 0.0765  | 312 | 312 | susie | 2.0283  | 0.04253 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000260025.1   | 2  | 36355113  | 36355114  | 0.006454  | rs6758291  | 2.85      | rs4670544  | 0.0121    | -2.97 | 2.2139  | 671 | 1   | top1  | -2.2139 | 0.02684 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000115392.11  | 2  | 58241347  | 58241348  | -0.024368 | rs4233972  | 2.65      | rs2312192  | 0.00919   | -2.19 | -2.026  | 339 | 1   | top1  | 2.026   | 0.04276 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000271889.1   | 2  | 61162104  | 61162105  | 0.065143  | rs778755   | 3.63      | rs1186706  | 0.0191    | -4.05 | 1.9575  | 311 | 311 | susie | -3.0046 | 0.00266 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000273302.1   | 2  | 61199978  | 61199979  | 0.054419  | rs778755   | 3.65      | rs1177309  | 0.00679   | 3.37  | -1.609  | 303 | 303 | susie | -2.6196 | 0.0088  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000270820.5   | 2  | 61471187  | 61471188  | 0.020641  | rs778755   | 3.69      | rs6545895  | -0.00495  | 2.61  | -2.1716 | 299 | 3   | lasso | -2.7595 | 0.00579 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000163586.9   | 2  | 88128115  | 88128116  | 0.686058  | rs6712707  | -2.84     | rs2970901  | 0.416     | -8.84 | 1.632   | 256 | 9   | enet  | -2.0237 | 0.043   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000234028.3   | 2  | 88627576  | 88627577  | 0.006779  | rs6712707  | -2.94     | rs6759503  | -0.00552  | -2.76 | -2.156  | 229 | 2   | lasso | 2.5858  | 0.00971 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000227265.2   | 2  | 94735843  | 94735844  | 0.117196  | rs3113002  | -3.29     | rs11164111 | 0.0821    | 4.98  | -1.4277 | 64  | 64  | susie | -2.3239 | 0.02013 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000084090.13  | 2  | 96208414  | 96208415  | 0.204142  | rs7599598  | -3.14     | rs3813662  | 0.0129    | -2.95 | -0.1801 | 153 | 32  | enet  | 2.0951  | 0.03616 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000101460.12  | 20 | 34546853  | 34546854  | 0.090235  | rs12624640 | 3.2       | rs6088527  | 0.05483   | 5.4   | 2.7526  | 303 | 303 | susie | 2.7999  | 0.00511 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000101464.10  | 20 | 34677084  | 34677085  | 0.00152   | rs12624640 | 3.22      | rs11546155 | 0.03385   | 2.96  | -2.5743 | 318 | 1   | top1  | -2.5743 | 0.01005 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000142166.12  | 21 | 33324476  | 33324477  | 0.02218   | rs2008980  | 3.17      | rs11700826 | -0.005055 | -2.86 | 0.207   | 437 | 437 | susie | 2.449   | 0.01433 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000273210.1   | 21 | 37365788  | 37365789  | 0.04338   | rs11088397 | 4.7       | rs11702026 | 0.023548  | -3.58 | 3.321   | 499 | 11  | enet  | -3.067  | 0.00216 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000173705.8   | 3  | 33219214  | 33219215  | 0.120074  | rs1878887  | -2.87     | rs4678778  | 0.015742  | 3.74  | 1.551   | 357 | 16  | enet  | 2.0124  | 0.0442  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000041880.14  | 3  | 51942344  | 51942345  | 0.065102  | rs1060330  | -2.64     | rs353548   | -0.003679 | 2.45  | 2.069   | 227 | 1   | lasso | 2.069   | 0.0385  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000239732.3   | 3  | 52226162  | 52226163  | 0.115204  | rs6774097  | -2.84     | rs1541495  | -0.005585 | -3.12 | 2.023   | 320 | 13  | lasso | -2.0769 | 0.0378  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000168237.17  | 3  | 52287088  | 52287089  | 0.078324  | rs6774097  | 2.83      | rs9311474  | 0.018737  | 4     | -2.615  | 334 | 334 | susie | -2.4116 | 0.0159  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000239519.1   | 3  | 86028006  | 86028007  | 0.418401  | rs6549078  | -3.52     | rs12486982 | 0.269339  | 7.1   | 2.06    | 313 | 313 | susie | 2.1199  | 0.034   | Brain_N                                        |

|                    |    |           |           |           |            |       |            |           |        |          |     |     |       |          |          |                                                |
|--------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|--------|----------|-----|-----|-------|----------|----------|------------------------------------------------|
| ENSG00000156219.16 | 4  | 76011183  | 76011184  | 0.128343  | rs17236661 | -5.83 | rs1542096  | -0.0012   | -3.51  | -4.19031 | 471 | 9   | lasso | 4.1283   | 3.65E-05 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000189157.13 | 4  | 76214039  | 76214040  | 0.520007  | rs17236661 | -5.83 | rs1876539  | 0.37      | -8.62  | 4.51021  | 482 | 482 | susie | -4.455   | 8.39E-06 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000138760.9  | 4  | 76234535  | 76234536  | 0.23725   | rs17236661 | -5.83 | rs2869851  | 0.086     | 4.29   | 3.412    | 485 | 6   | lasso | 3.8151   | 0.000136 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000164099.3  | 4  | 118353002 | 118353003 | 0.34025   | rs4834642  | 3.13  | rs7674055  | 0.222     | 6.67   | 2.185    | 260 | 260 | susie | 2.13     | 0.0332   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000281731.2  | 4  | 118685340 | 118685341 | 0.332098  | rs4834755  | 3.12  | rs298981   | 0.208     | 6.88   | 2.00075  | 347 | 347 | susie | 1.9978   | 0.0457   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000248890.1  | 4  | 144661356 | 144661357 | 0.20368   | rs2175586  | 2.88  | rs7680661  | 0.0379    | -4.72  | 1.98055  | 252 | 17  | enet  | -2.0054  | 0.0449   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000248208.1  | 4  | 153658571 | 153658572 | 0.099208  | rs9992080  | 2.8   | rs1816702  | 0.00249   | 3.03   | -2.063   | 432 | 1   | lasso | -2.063   | 0.0391   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000067248.9  | 5  | 55307721  | 55307722  | 0.098176  | rs1423249  | 2.81  | rs17442888 | -0.005584 | -3.35  | -1.751   | 385 | 385 | susie | 2.1247   | 0.03361  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000145730.20 | 5  | 102753980 | 102753981 | 0.119172  | rs17154942 | -3.46 | rs5855     | 0.044021  | 4.9    | -2.8355  | 304 | 304 | susie | -2.6601  | 0.00781  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000175749.11 | 5  | 103032375 | 103032376 | 0.338904  | rs2288788  | -3.7  | rs26434    | 0.383217  | 8.45   | -3.0846  | 307 | 1   | top1  | -3.0846  | 0.00204  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000198108.3  | 5  | 129904471 | 129904472 | 0.042092  | rs30300    | 3.76  | rs1363475  | -0.005151 | 2.82   | 2.7218   | 302 | 1   | lasso | 2.7218   | 0.00649  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000111877.17 | 6  | 118935161 | 118935162 | 0.039546  | rs6932585  | -3.98 | rs9374750  | 0.004733  | 3.63   | -2.761   | 382 | 1   | top1  | -2.761   | 0.00576  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000124613.8  | 6  | 27374614  | 27374615  | 0.307805  | rs6918131  | -4.23 | rs6920362  | 0.215298  | -6.406 | -4.114   | 394 | 394 | susie | 4.3569   | 1.32E-05 | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000227214.2  | 6  | 28986202  | 28986203  | 0.000402  | rs4713216  | 2.37  | rs4713216  | -0.005585 | 1.486  | 2.37     | 9   | 1   | lasso | 2.37     | 0.0178   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000227609.2  | 6  | 29577458  | 29577459  | 0.000218  | rs4713216  | 2.37  | rs4713216  | 0.015823  | -2.735 | 2.37     | 41  | 1   | top1  | -2.37    | 0.0178   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000204657.3  | 6  | 29587454  | 29587455  | -0.026249 | rs4713216  | 2.37  | rs4713216  | 0.017784  | -2.23  | 2.37     | 41  | 1   | lasso | -2.37    | 0.0178   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000230521.1  | 6  | 29888267  | 29888268  | 0.432052  | rs4713216  | 2.37  | rs4713216  | 0.054999  | 3.519  | 2.37     | 41  | 25  | enet  | 2.045    | 0.0409   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000006451.7  | 7  | 39623482  | 39623483  | 0.02625   | rs17171597 | -3.15 | rs11769865 | 0.042366  | 4.15   | 2.3421   | 373 | 7   | enet  | 2.7024   | 0.00688  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000188185.11 | 7  | 39733631  | 39733632  | 0.121081  | rs17171597 | -3.15 | rs2876862  | 0.076813  | 4.78   | 2.2486   | 356 | 356 | susie | 2.3539   | 0.01858  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000226581.1  | 7  | 63900822  | 63900823  | 0.030102  | rs10274542 | 3.05  | rs7810399  | 0.015163  | -2.95  | 2.082    | 183 | 1   | top1  | -2.082   | 0.03734  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000234715.1  | 7  | 103445206 | 103445207 | 0.008503  | rs12540583 | 3.43  | rs17157216 | -0.000236 | -3.01  | -2.173   | 424 | 424 | susie | 2.1003   | 0.0357   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000106278.11 | 7  | 121873088 | 121873089 | 0.005365  | rs7800404  | -3.13 | rs10238474 | -0.005586 | -2.89  | -2.176   | 365 | 365 | susie | 2.3659   | 0.01798  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000234418.1  | 7  | 122216346 | 122216347 | 0.077116  | rs7785453  | 3.38  | rs2189601  | -0.004428 | 3.32   | -0.182   | 332 | 29  | enet  | -2.5032  | 0.01231  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000181072.11 | 7  | 136868668 | 136868669 | 0.018419  | rs225137   | -3.29 | rs17169050 | -0.002134 | -2.61  | 2.3351   | 398 | 398 | susie | -2.1136  | 0.03455  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000253661.1  | 8  | 76683277  | 76683278  | 0.166217  | rs2733709  | -3.68 | rs12542671 | 0.01347   | -0.55  | 0.056    | 353 | 353 | susie | -2.1094  | 0.03491  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000260398.1  | 8  | 78605951  | 78605952  | 0.302232  | rs16919538 | 3.73  | rs6990845  | 0.133298  | 5.58   | 2.598    | 326 | 4   | lasso | 3.0366   | 0.00239  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000104517.12 | 8  | 102412840 | 102412841 | 0.045646  | rs6935     | -3.07 | rs648119   | -0.004746 | 3.05   | 2.13     | 486 | 1   | enet  | 2.13     | 0.03317  | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000106823.12 | 9  | 92536654  | 92536655  | 0.096148  | rs710161   | 2.44  | rs1874128  | 0.0292    | 3.74   | -2.3177  | 376 | 376 | susie | -2.24364 | 0.0249   | Brain_Nucleus_accumbens_basal_ganglia.nofilter |
| ENSG00000004487.15 | 1  | 23019447  | 23019448  | 0.070403  | rs294223   | 2.46  | rs294223   | 0.005109  | 3.07   | 2.456    | 376 | 1   | lasso | 2.456    | 0.01405  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000159592.10 | 1  | 45687145  | 45687146  | -0.026266 | rs3219487  | -2.51 | rs3219487  | 0.002304  | -2.27  | -2.512   | 286 | 1   | top1  | 2.512    | 0.012    | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000281571.2  | 1  | 145214850 | 145214851 | 0.004483  | rs12129861 | -2.45 | rs1284300  | -0.006286 | -1.62  | -0.7215  | 8   | 8   | susie | 2.4226   | 0.01541  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000143368.9  | 1  | 149928343 | 149928344 | 0.023018  | rs7521768  | -2.14 | rs3208509  | 0.006348  | 2.3    | -1.96    | 135 | 1   | top1  | -1.96    | 0.04999  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000158859.9  | 1  | 161199055 | 161199056 | 0.092099  | rs1801274  | -4.09 | rs17411858 | 0.027678  | -3.42  | 2.5057   | 377 | 2   | lasso | -2.7092  | 0.00675  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000169905.12 | 1  | 179877802 | 179877803 | 0.043259  | rs6425611  | -2.46 | rs3806302  | -0.006619 | -3     | -2.1735  | 515 | 2   | lasso | 2.167    | 0.03024  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000234742.12 | 1  | 225777812 | 225777813 | 0.033063  | rs10753410 | 2.83  | rs12038486 | 0.002591  | -2.86  | 2.586    | 41  | 1   | top1  | -2.586   | 0.00971  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000099251.14 | 10 | 38356379  | 38356380  | 0.056858  | rs2749592  | 2.36  | rs7915062  | -0.00661  | -2.39  | -1.814   | 138 | 49  | enet  | 2.196    | 0.028122 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000232706.3  | 10 | 50676742  | 50676743  | -0.051428 | rs2339624  | 3.35  | rs12358162 | 0.01755   | -2.16  | 2.497    | 428 | 1   | top1  | -2.497   | 0.012536 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000122952.16 | 10 | 56361274  | 56361275  | 0.168711  | rs11005496 | 2.64  | rs11005496 | -0.00517  | -3.28  | 2.642    | 357 | 9   | lasso | -2.057   | 0.039687 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000268584.1  | 10 | 73625995  | 73625996  | 0.106082  | rs10762573 | -3.58 | rs1874152  | 0.01915   | -3.27  | 3.53     | 247 | 1   | top1  | -3.53    | 0.000415 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000272791.1  | 10 | 73630555  | 73630556  | 0.029688  | rs2131960  | -3.58 | rs2279648  | -0.00659  | -2.77  | -2.322   | 246 | 2   | lasso | -2.322   | 0.020241 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000273124.1  | 10 | 90997712  | 90997713  | 0.124487  | rs1274399  | 3.46  | rs11186543 | -0.00589  | -2.88  | 1.15     | 437 | 437 | susie | -2.256   | 0.024045 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000255139.1  | 11 | 59616428  | 59616429  | 0.133031  | rs17154165 | 3.44  | rs477729   | 0.10562   | 4.55   | 2.431    | 330 | 1   | top1  | 2.431    | 0.0151   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000255445.1  | 11 | 93152074  | 93152075  | 0.069395  | rs4237557  | 2.72  | rs7130688  | 0.015016  | 3.88   | 0.595    | 439 | 28  | enet  | 2.12784  | 0.0334   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000004700.15 | 12 | 21501668  | 21501669  | 0.138839  | rs7311964  | 2.58  | rs4149087  | 0.016063  | -3.73  | 1.957    | 542 | 542 | susie | -2.273   | 0.023    | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000066084.12 | 12 | 50505106  | 50505107  | 0.104554  | rs10783342 | 2.99  | rs10735827 | 0.002363  | 3.92   | 1.245    | 296 | 296 | susie | 2.3736   | 0.0176   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000166130.14 | 12 | 98645112  | 98645113  | 0.390217  | rs17028572 | 2.98  | rs3815997  | 0.14421   | 5.84   | 1.478    | 443 | 31  | enet  | 2.3191   | 0.0204   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000120868.13 | 12 | 98645140  | 98645141  | 0.022839  | rs17028572 | 2.98  | rs7968661  | -0.002358 | 3.01   | 2.3517   | 443 | 1   | lasso | 2.3517   | 0.0187   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000165621.8  | 13 | 96994729  | 96994730  | 0.315585  | rs4771267  | 3.7   | rs1933009  | 0.10649   | 5.08   | 2.035    | 354 | 354 | susie | 2.006    | 0.0449   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000165502.6  | 14 | 49620684  | 49620685  | 0.554871  | rs8021453  | 2.85  | rs2985697  | 0.331072  | -7.38  | 2.17     | 380 | 380 | susie | -2.1045  | 0.0353   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000100614.17 | 14 | 60245751  | 60245752  | 0.056096  | rs10151922 | 2.71  | rs1887104  | 0.036097  | -3.9   | 2.31     | 281 | 1   | top1  | 2.31     | 0.0209   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000103126.14 | 16 | 352672    | 352673    | 0.106933  | rs7205963  | -2.63 | rs395901   | -0.002503 | 3.12   | 1.47     | 372 | 5   | lasso | 2.02478  | 0.0429   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000140990.14 | 16 | 1959507   | 1959508   | 0.11859   | rs2064289  | -4.39 | rs3785272  | -0.003456 | 3.41   | -3.7041  | 444 | 1   | top1  | -3.70405 | 0.000212 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000255513.1  | 16 | 1964094   | 1964095   | 0.330687  | rs2064289  | -4.39 | rs758334   | 0.184562  | 5.53   | -3.2025  | 444 | 1   | top1  | -3.20247 | 0.00136  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000127561.14 | 16 | 1989659   | 1989660   | 0.055235  | rs8058190  | 4.38  | rs758334   | -0.00162  | -3.17  | -3.2008  | 424 | 3   | lasso | 3.20082  | 0.00137  | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000183971.6  | 16 | 2009926   | 2009926   | 0.040261  | rs8058190  | 4.4   | rs17602    | -0.0047   | -3.11  | -2.5218  | 412 | 1   | top1  | 2.52178  | 0.0117   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000008710.19 | 16 | 2135897   | 2135898   | 0.043771  | rs8058190  | 4.35  | rs11640479 | -0.001079 | 3.33   | -2.5594  | 360 | 9   | enet  | -3.94043 | 8.13E-05 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000167964.12 | 16 | 2140802   | 2140803   | 0.103708  | rs8058190  | 4.35  | rs10866    | -0.006409 | 2.86   | 1.642    | 360 | 360 | susie | -3.57564 | 0.000349 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000131653.12 | 16 | 2155697   | 2155698   | 8.00E-04  | rs8058190  | 4.3   | rs17653749 | 0.023787  | -2.76  | -2.0986  | 351 | 1   | top1  | 2.09864  | 0.0358   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000167965.17 | 16 | 2204247   | 2204248   | 0.438962  | rs8055439  | -4.29 | rs27699    | 0.315423  | 6.99   | -2.1121  | 353 | 1   | top1  | -2.11207 | 0.0347   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG000000034713.7 | 16 | 75566350  | 75566351  | 0.038368  | rs174000   | -3.12 | rs8052310  | -0.005397 | -3.05  | 2.366    | 372 | 2   | lasso | -2.19232 | 0.0284   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000108588.13 | 17 | 63776350  | 63776351  | 0.042967  | rs4465659  | 2.41  | rs7221979  | 0.007436  | -2.32  | 2.29126  | 315 | 1   | top1  | -2.2913  | 0.0219   | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG000000041353.9 | 18 | 54717859  | 54717860  | -0.102352 | rs1261106  | -4.17 | rs12954483 | -0.0065   | 1.96   | -3.528   | 369 | 1   | top1  | -3.528   | 0.000419 | Brain_Putamen_basal_ganglia.nofilter           |
| ENSG00000278129.1  |    |           |           |           |            |       |            |           |        |          |     |     |       |          |          |                                                |

|                    |    |           |           |           |            |       |            |           |       |           |     |     |       |           |          |                                         |
|--------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|-------|-----------|-----|-----|-------|-----------|----------|-----------------------------------------|
| ENSG00000211592.8  | 2  | 88857682  | 88857683  | -0.032806 | rs6712707  | -2.94 | rs13413588 | 0.001497  | 1.58  | -2.317    | 135 | 1   | top1  | -2.317    | 0.0205   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000211597.2  | 2  | 88861922  | 88861923  | -0.006934 | rs6712707  | -2.94 | rs4449134  | -0.00239  | 1.49  | -2.185    | 134 | 1   | top1  | -2.185    | 0.02889  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000115947.13 | 2  | 148020762 | 148020763 | 0.028334  | rs1234404  | -3.6  | rs41477845 | -0.006342 | -2.75 | -1.20589  | 327 | 6   | lasso | 2.186119  | 0.02881  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000281469.1  | 2  | 148044379 | 148044380 | -0.028742 | rs1234404  | -3.6  | rs1234415  | 0.018185  | 2.17  | -3.162928 | 325 | 1   | top1  | -3.162928 | 0.00156  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000153250.19 | 2  | 160493793 | 160493794 | 0.131109  | rs4664233  | 3.64  | rs7425305  | -0.002914 | -3.31 | 3.064     | 409 | 409 | susie | -2.595666 | 0.00944  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000138439.11 | 2  | 202635187 | 202635188 | 0.081695  | rs34758780 | -2.89 | rs4560092  | 0.028653  | -3.27 | -2.035    | 240 | 1   | top1  | 2.035     | 0.04185  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000144426.18 | 2  | 203014878 | 203014879 | 0.004525  | rs34807562 | -2.98 | rs11694728 | -0.0057   | -2.5  | 1.768     | 261 | 261 | susie | -2.129222 | 0.03324  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000115365.11 | 2  | 210477651 | 210477652 | -0.049334 | rs186471   | -2.29 | rs10804178 | 0.073002  | 1.69  | 2.012     | 347 | 1   | top1  | 2.012     | 0.04422  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000101460.12 | 20 | 34546853  | 34546854  | 0.197759  | rs12624640 | 3.2   | rs6059918  | 0.15368   | 5.56  | 2.7915    | 302 | 302 | susie | 2.7915    | 0.00687  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000101464.10 | 20 | 34677084  | 34677085  | 0.009128  | rs12624640 | 3.22  | rs11546155 | 0.0562    | 3.29  | -2.5743   | 317 | 1   | top1  | -2.574    | 0.01005  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000260032.1  | 20 | 36050959  | 36050960  | 0.036252  | rs6073885  | -2.3  | rs2425132  | -0.002687 | 2.55  | 1.407     | 256 | 256 | susie | 1.996     | 0.04598  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000274825.1  | 20 | 38955909  | 38955910  | 0.064079  | rs6129020  | -3.16 | rs6129020  | -0.002193 | -3.25 | -3.16     | 410 | 2   | lasso | 3.154     | 0.00161  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000101452.14 | 20 | 38962298  | 38962299  | 0.028297  | rs6129020  | -3.16 | rs6129210  | -0.004388 | 2.73  | 2.381     | 414 | 1   | lasso | 2.381     | 0.01727  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000279690.1  | 21 | 32791503  | 32791504  | 0.0065    | rs8132490  | 3.26  | rs4817516  | -0.0061   | 3.08  | -2.0545   | 488 | 1   | lasso | -2.05448  | 0.03993  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000273210.1  | 21 | 37365788  | 37365789  | 0.08143   | rs11088397 | 4.7   | rs3827199  | -0.00351  | 2.86  | -0.189    | 499 | 499 | susie | -3.27542  | 0.00106  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000172995.16 | 3  | 35638944  | 35638945  | 0.003887  | rs4678509  | -3.34 | rs17033265 | -0.005203 | -2.95 | -0.444897 | 400 | 400 | susie | 2.596     | 0.00943  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000243224.1  | 3  | 52239260  | 52239261  | 0.007781  | rs6774097  | 2.84  | rs730050   | -0.003769 | 2.55  | -2.3149   | 321 | 321 | susie | -2.1297   | 0.03319  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000164091.11 | 3  | 52288019  | 52288020  | 0.00756   | rs6774097  | 2.85  | rs1546737  | 0.000358  | 2.37  | 1.40475   | 336 | 30  | enet  | 2.5834    | 0.00978  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000163946.13 | 3  | 56683236  | 56683237  | -0.01981  | rs1872947  | -2.25 | rs12054386 | -0.003217 | -3.07 | -2.219    | 444 | 2   | enet  | 2.2166    | 0.02665  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000239519.1  | 3  | 86028006  | 86028007  | 0.390626  | rs6549078  | -3.52 | rs12486982 | 0.251596  | 6.23  | 2.06      | 312 | 1   | top1  | 2.06      | 0.0394   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000169714.16 | 3  | 129183921 | 129183922 | 0.069002  | rs11709852 | 3.3   | rs13065032 | 0.071331  | 3.48  | 2.39      | 309 | 1   | top1  | 2.39      | 0.01685  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000240695.1  | 3  | 136737228 | 136737229 | 0.067089  | rs17200503 | 2.18  | rs361237   | -0.005222 | 3.83  | 1.5535    | 340 | 3   | enet  | 2.2713    | 0.02313  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000152990.13 | 4  | 22516053  | 22516054  | 0.069494  | rs2581965  | -2.99 | rs2250074  | 0.044688  | 2.36  | 2.372     | 353 | 1   | top1  | 2.372     | 0.0177   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000177752.14 | 4  | 44678425  | 44678426  | 0.354659  | rs10517102 | 3.56  | rs2046910  | 0.14948   | 4.46  | -2.48     | 372 | 23  | enet  | -2.4314   | 0.015    | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000163281.11 | 4  | 44726594  | 44726595  | 0.392678  | rs10517102 | 3.33  | rs12489960 | 0.257263  | 6.61  | -2.429    | 375 | 375 | susie | -2.5168   | 0.0118   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG000002050125.1 | 4  | 65004499  | 65004500  | 0.184564  | rs17086224 | 3.62  | rs9993074  | 0.02946   | 4.24  | 2.0864    | 391 | 13  | lasso | 2.4195    | 0.0155   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000138769.10 | 4  | 75630715  | 75630716  | 0.161957  | rs17220803 | -3.86 | rs34165603 | 0.024924  | -3.9  | 3.1117    | 441 | 13  | enet  | 2.6756    | 0.00746  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000138757.14 | 4  | 75724525  | 75724526  | 0.098594  | rs7685696  | 5.65  | rs34165603 | 0.062264  | -4.03 | 3.0439    | 459 | 1   | top1  | -3.0439   | 0.00233  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000138755.5  | 4  | 76007487  | 76007488  | -0.063663 | rs17236661 | -5.83 | rs17221100 | 0.044855  | 2.29  | 2.287     | 469 | 1   | top1  | 2.287     | 0.0222   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000156219.16 | 4  | 76011183  | 76011184  | 0.315706  | rs17236661 | -5.83 | rs13131187 | -0.004287 | 3.89  | 2.5525    | 471 | 33  | enet  | 2.2329    | 0.0256   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000169245.5  | 4  | 76023496  | 76023497  | 0.013859  | rs17236661 | -5.83 | rs907446   | -0.004421 | 2.91  | 1.9952    | 474 | 2   | lasso | 2.6582    | 0.00786  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000189157.13 | 4  | 76214039  | 76214040  | 0.584984  | rs17236661 | -5.83 | rs1876539  | 0.518902  | -9.07 | 4.5102    | 482 | 482 | susie | -4.3828   | 1.17E-05 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000138760.9  | 4  | 76234535  | 76234536  | 0.115677  | rs17236661 | -5.83 | rs6835986  | 0.057537  | -4.09 | 3.6266    | 485 | 7   | enet  | 2.5247    | 0.0116   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000213891.3  | 5  | 61391870  | 61391871  | 0.038502  | rs2270822  | 7.17  | rs2055380  | -0.00534  | 3.04  | -2.16657  | 390 | 3   | lasso | -2.0152   | 0.043884 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000164199.16 | 5  | 90529343  | 90529344  | 0.177787  | rs16868974 | 2.86  | rs10044044 | 0.126973  | 4.66  | -2.236    | 382 | 1   | top1  | -2.236    | 0.025352 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000145730.20 | 5  | 102753980 | 102753981 | 0.029596  | rs17154942 | -3.46 | rs3733939  | 0.040144  | 3.16  | -2.10947  | 303 | 3   | lasso | -2.11148  | 0.034731 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000175749.11 | 5  | 103032375 | 103032376 | 0.185742  | rs2288788  | -3.7  | rs11242484 | 0.214177  | -6.64 | -2.76852  | 306 | 306 | susie | -2.76344  | 0.00572  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000164611.12 | 5  | 160421821 | 160421822 | -0.067881 | rs10052694 | -0.55 | rs4301261  | 0.017181  | 3.36  | 3.422     | 467 | 1   | lasso | -3.422    | 0.000622 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000111875.7  | 6  | 118894356 | 118894357 | -0.030175 | rs6932585  | -3.98 | rs7742473  | 0.00562   | 2.25  | -2.8729   | 386 | 1   | top1  | -2.8729   | 0.00407  | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000124613.8  | 6  | 27374614  | 27374615  | 0.30823   | rs6918131  | -4.23 | rs6920362  | 0.242807  | -6.44 | -4.114    | 393 | 393 | susie | 4.1358    | 3.54E-05 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000271755.1  | 6  | 27406963  | 27406964  | 0.20023   | rs6918131  | -4.23 | rs2294308  | -0.006614 | -3.38 | -3.327    | 406 | 406 | susie | 3.639     | 0.000274 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000127947.15 | 7  | 77537274  | 77537275  | 0.323134  | rs6967577  | -2.48 | rs12113982 | 0.006758  | -4.19 | 1.555     | 371 | 17  | enet  | -1.96489  | 0.0494   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000127954.12 | 7  | 88306890  | 88306891  | 0.142874  | rs10487033 | 3.66  | rs2106292  | -0.003241 | -3.19 | 0.96      | 382 | 382 | susie | -2.01849  | 0.0435   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000058091.16 | 7  | 90563734  | 90563735  | -0.00831  | rs4512312  | -3.35 | rs17867686 | 0.021146  | 3.01  | -2.004    | 439 | 1   | top1  | -2.00396  | 0.0451   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000170775.2  | 7  | 124765626 | 124765627 | -0.04387  | rs13226395 | 2.2   | rs13246702 | 0.008878  | 1.72  | -2.111    | 365 | 1   | top1  | -2.111    | 0.0348   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000128513.14 | 7  | 124929871 | 124929872 | 0.00816   | rs13226395 | 2.18  | rs17147723 | 0.006648  | -2.68 | 2.085     | 349 | 1   | top1  | -2.085    | 0.0371   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000178125.14 | 8  | 67028560  | 67028561  | 0.173336  | rs7840028  | -2.93 | rs17333264 | 0.011309  | 3.21  | 1.4252    | 179 | 13  | enet  | 2.348     | 0.018875 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000260398.1  | 8  | 78605951  | 78605952  | 0.299991  | rs16919538 | 3.73  | rs6990845  | 0.076646  | 5.4   | 2.598     | 328 | 17  | enet  | 3.4896    | 0.000484 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000173334.3  | 8  | 125430320 | 125430321 | 0.068716  | rs4464986  | -3.09 | rs3812467  | -0.006617 | -3.26 | 2.0017    | 442 | 2   | enet  | -1.9919   | 0.046377 | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000106823.12 | 9  | 92536654  | 92536655  | 0.208753  | rs710161   | 2.44  | rs10992427 | 0.095182  | 4.29  | -2.165    | 379 | 1   | top1  | -2.165    | 0.0304   | Brain_Putamen_basal_ganglia.nofilter    |
| ENSG00000272419.6  | 1  | 145216057 | 145216058 | 0.030468  | rs12129861 | -2.45 | rs900347   | 0.0248    | -2.52 | 2.382     | 8   | 1   | top1  | -2.382    | 0.017219 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000116580.18 | 1  | 155859399 | 155859400 | 0.04068   | rs35643925 | 6.07  | rs822516   | 0.014     | -2.52 | -2.184    | 258 | 1   | lasso | 2.184     | 0.028962 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000117697.14 | 1  | 212791781 | 212791782 | -0.04719  | rs10779598 | 3.15  | rs6679892  | -0.00326  | -3.06 | 2.4545    | 416 | 1   | lasso | -2.4545   | 0.014108 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000154309.8  | 1  | 222872270 | 222872271 | 0.006078  | rs4636472  | -2.55 | rs4846387  | -0.00866  | -3.11 | 1.9555    | 361 | 2   | lasso | -2.0132   | 0.044092 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000143751.9  | 1  | 225999330 | 225999331 | 0.135196  | rs10915933 | -2.86 | rs17515010 | -0.00885  | 2.98  | -1.047    | 381 | 381 | susie | -3.3284   | 0.000873 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000231345.3  | 10 | 50655966  | 50655967  | 0.091502  | rs2339624  | 3.33  | rs4935737  | 0.025003  | 3.85  | -1.509    | 414 | 6   | enet  | -2.5243   | 0.0116   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000229659.1  | 10 | 73422695  | 73422696  | -0.022145 | rs2227564  | -2.94 | rs2461863  | 0.034822  | -2.79 | -0.0219   | 228 | 1   | top1  | 2.0219    | 0.0432   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000189057.10 | 11 | 59107184  | 59107185  | 0.030311  | rs2276151  | -3.01 | rs7940789  | -0.005754 | 2.8   | -2.7153   | 315 | 1   | lasso | -2.715283 | 0.00662  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000166900.15 | 11 | 59755058  | 59755059  | 0.044252  | rs17154165 | 3.44  | rs7117509  | -0.002851 | -3.26 | 2.806     | 333 | 2   | lasso | -2.729575 | 0.00634  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000207304.1  | 11 | 93732498  | 93732499  | 0.063229  | rs12289146 | -2.82 | rs897555   | -0.008735 | 2.95  | 0.8998    | 397 | 397 | susie | 2.366919  | 0.01794  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000166012.16 | 11 | 93742897  | 93742898  | 0.155224  | rs12289146 | -2.82 | rs2213108  | -0.007693 | 3.27  | 1.325     | 395 | 395 | susie | 2.108946  | 0.03495  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000276148.1  | 12 | 32725659  | 32725660  | 0.072587  | rs11830829 | -4.22 | rs6488097  | -0.002665 | -3.07 | -2.624    | 492 | 1   | top1  | 2.624     |          |                                         |

|                    |    |           |           |           |            |        |            |           |        |          |     |     |       |           |          |                                         |
|--------------------|----|-----------|-----------|-----------|------------|--------|------------|-----------|--------|----------|-----|-----|-------|-----------|----------|-----------------------------------------|
| ENSG00000165502.6  | 14 | 49620684  | 49620685  | 0.532024  | rs8021453  | 2.85   | rs2985697  | 0.449097  | -7.33  | 2.17     | 381 | 1   | top1  | -2.17     | 0.030007 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000100614.17 | 14 | 60245751  | 60245752  | 0.107796  | rs10151922 | 2.71   | rs8005975  | 0.001559  | 2.74   | 2.1922   | 280 | 1   | top1  | 2.1922    | 0.028364 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000258867.5  | 14 | 88024549  | 88024550  | 0.122608  | rs10142115 | 3.49   | rs3213915  | 0.050485  | 3.54   | -2.7615  | 468 | 1   | top1  | -2.7615   | 0.005753 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000256061.7  | 15 | 55508233  | 55508234  | 0.196964  | rs16975936 | 2.83   | rs3759861  | 0.00168   | 3.29   | -2.219   | 418 | 418 | susie | -2.5312   | 0.0114   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000242173.8  | 16 | 271881    | 271882    | 0.298809  | rs7205963  | -2.65  | rs7200589  | 0.138722  | -5.17  | -1.91358 | 332 | 11  | enet  | 2.197979  | 0.027951 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000099769.5  | 16 | 1794970   | 1794971   | 0.094552  | rs2667684  | -0.42  | rs6600181  | -0.007869 | 3.22   | 0.207    | 469 | 469 | susie | -2.103294 | 0.03544  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000140990.14 | 16 | 1959507   | 1959508   | 0.089932  | rs2064289  | -4.39  | rs8051877  | -0.000525 | -3.35  | 2.74404  | 441 | 2   | enet  | -3.790026 | 0.000151 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000255513.1  | 16 | 1964094   | 1964095   | 0.53295   | rs2064289  | -4.39  | rs2302178  | 0.386943  | 6.87   | -2.562   | 441 | 441 | susie | -2.914286 | 0.003565 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000140988.15 | 16 | 1964859   | 1964860   | 0.085426  | rs2064289  | -4.39  | rs722565   | -0.00011  | 3.11   | -1.90927 | 440 | 4   | lasso | -1.972021 | 0.048607 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000255198.4  | 16 | 1964958   | 1964959   | -0.073971 | rs2064289  | -4.39  | rs2815301  | 0.060984  | -4.19  | 2.48663  | 440 | 1   | top1  | -2.486625 | 0.012896 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000183751.14 | 16 | 1972036   | 1972037   | -0.070977 | rs2064289  | -4.4   | rs758334   | 0.00577   | 2.8    | -3.20155 | 436 | 1   | top1  | -3.201552 | 0.001367 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000127554.12 | 16 | 1984206   | 1984207   | 0.523921  | rs8058190  | 4.38   | rs8053843  | 0.09973   | 3.88   | -3.723   | 430 | 16  | enet  | -3.386874 | 0.000707 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000008710.19 | 16 | 2135897   | 2135898   | 0.010434  | rs8058190  | 4.35   | rs3785273  | -0.00805  | 2.7    | -0.715   | 358 | 25  | enet  | -3.273281 | 0.001063 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000167964.12 | 16 | 2140802   | 2140803   | 0.046743  | rs8058190  | 4.35   | rs3743511  | 0.007392  | 2.7    | -3.043   | 358 | 1   | top1  | -3.043    | 0.002342 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000167543.15 | 17 | 29566051  | 29566052  | 0.005184  | rs877492   | -2.58  | rs550818   | 0.0123    | -2.27  | 1.925    | 315 | 5   | enet  | -1.99802  | 0.0457   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000267248.1  | 17 | 60134997  | 60134998  | 0.013902  | rs11490479 | -2.47  | rs11655643 | 0.00654   | -3.37  | -2.026   | 208 | 208 | susie | 2.44477   | 0.0145   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000266173.6  | 17 | 63741985  | 63741986  | 0.079923  | rs4465659  | 2.41   | rs7218917  | -0.00866  | 2.83   | 0.737    | 313 | 313 | susie | -2.03388  | 0.042    | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG000000041353.9 | 18 | 54717859  | 54717860  | 0.042396  | rs1261106  | -2.17  | rs11875348 | -0.00607  | -2.65  | -2.9265  | 369 | 1   | lasso | 2.9265    | 0.00343  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000268516.2  | 19 | 58278807  | 58278808  | 0.202523  | rs260461   | 3.5    | rs260484   | 0.133     | 4.28   | -2.194   | 343 | 1   | top1  | -2.194    | 0.0282   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000223754.1  | 2  | 24201697  | 24201698  | 0.069022  | rs918812   | 3.22   | rs1134516  | -0.0086   | 2.386  | 1.7144   | 283 | 283 | susie | 2.9361    | 0.00332  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000003095.15 | 2  | 37231713  | 37231714  | 0.122608  | rs4670713  | -2.76  | rs13398187 | 0.00956   | -3.488 | 1.394    | 462 | 12  | enet  | -2.399    | 0.01644  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000273302.1  | 2  | 61199978  | 61199979  | 0.174558  | rs778755   | 3.65   | rs6545873  | 0.128     | -4.834 | 3.165    | 303 | 303 | susie | -3.074    | 0.00211  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000163586.9  | 2  | 88128115  | 88128116  | 0.375764  | rs6712707  | -2.94  | rs17350803 | 0.0899    | 5.088  | -2.819   | 256 | 12  | enet  | -2.5104   | 0.01206  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000239951.1  | 2  | 89143159  | 89143160  | -0.027419 | rs2012201  | 2.29   | rs2012201  | 0.0411    | -0.789 | 2.294    | 46  | 1   | top1  | -2.294    | 0.02179  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000223564.1  | 2  | 94760278  | 94760279  | 0.179916  | rs3113002  | -3.29  | rs7565772  | 0.0905    | -4.777 | -3.014   | 64  | 15  | enet  | -2.849    | 0.00439  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000163121.9  | 2  | 96508108  | 96508109  | -0.032856 | rs7582249  | -0.328 | rs1320146  | 0.0796    | 1.84   | -2.896   | 211 | 1   | top1  | -2.896    | 0.00378  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000230646.1  | 2  | 130428414 | 130428415 | 0.048608  | rs6721186  | 2.5    | rs6431146  | -0.00307  | -2.214 | -1.251   | 128 | 128 | susie | 2.1387    | 0.03246  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000115947.13 | 2  | 148020762 | 148020763 | 0.072942  | rs1234404  | -3.6   | rs2288190  | -0.00512  | -2.779 | 2.159    | 326 | 2   | lasso | -2.7526   | 0.00591  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000136535.14 | 2  | 161416093 | 161416094 | -0.046755 | rs13413741 | -3.03  | rs1710627  | 0.025     | 2.741  | -2.151   | 365 | 1   | lasso | -2.151    | 0.03148  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000144290.16 | 2  | 161427452 | 161427453 | 0.049934  | rs13413741 | -3.03  | rs3820998  | 0.0367    | 2.572  | 2.0038   | 361 | 1   | top1  | 2.0038    | 0.04509  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000273301.1  | 2  | 225698539 | 225698540 | 0.106657  | rs7585186  | -2.89  | rs6436579  | 0.0428    | 4.063  | -2.157   | 366 | 366 | susie | -2.322    | 0.02024  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000101460.12 | 20 | 34546853  | 34546854  | 0.05908   | rs12624640 | 3.2    | rs6059909  | 0.03431   | 3.39   | 2.788    | 303 | 303 | susie | 2.571     | 0.0101   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000197122.11 | 20 | 37344684  | 37344685  | -0.064749 | rs6019425  | -2.58  | rs6090964  | 0.01125   | -2.34  | 2.032    | 338 | 1   | top1  | -2.032    | 0.0422   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000205758.11 | 21 | 33643925  | 33643926  | 0.17935   | rs8127139  | 3.56   | rs2834242  | 0.016105  | -3.6   | 2.113    | 424 | 424 | susie | -2.171    | 0.0299   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000273210.1  | 21 | 37365788  | 37365789  | 0.007203  | rs11088397 | 0.47   | rs2835725  | 0.058505  | 3.4    | 2.375    | 496 | 1   | lasso | 2.375     | 0.0175   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000183977.13 | 3  | 20012329  | 20012330  | -0.026949 | rs1464294  | 2.98   | rs982501   | 0.02792   | -3.09  | 2.4233   | 413 | 3   | lasso | -2.2856   | 0.02228  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000183624.13 | 3  | 129278827 | 129278828 | -0.019088 | rs11709852 | 3.24   | rs16859047 | -0.006435 | -2.29  | -2.836   | 293 | 1   | top1  | 2.836     | 0.00457  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000174579.3  | 3  | 136197240 | 136197241 | 0.050034  | rs1007836  | -3.73  | rs3920305  | -0.006851 | 3.24   | -2.3687  | 285 | 1   | lasso | -2.3687   | 0.01785  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000261758.1  | 3  | 136752629 | 136752630 | 0.304544  | rs6780453  | -2.18  | rs696518   | 0.174638  | 5.37   | 2.126    | 340 | 340 | susie | 2.0015    | 0.04534  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000224097.5  | 4  | 39480254  | 39480255  | 0.227333  | rs2566103  | 2.27   | rs13144464 | 0.145223  | 4.75   | 2.205    | 366 | 1   | top1  | 2.205     | 0.027454 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000109814.11 | 4  | 39528017  | 39528018  | 0.049569  | rs11723907 | 2.27   | rs11732002 | 0.025685  | -3.09  | 1.966    | 353 | 1   | lasso | -1.966    | 0.049299 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000177752.14 | 4  | 44678425  | 44678426  | 0.074503  | rs10517102 | 3.56   | rs11936624 | -0.00361  | -3.15  | 3.1603   | 371 | 371 | susie | -3.0892   | 0.002007 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000151806.13 | 4  | 44678556  | 44678557  | 0.506033  | rs10517102 | 3.56   | rs17600797 | 0.31497   | -6.12  | -2.6376  | 371 | 371 | susie | 2.0323    | 0.042121 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000163281.11 | 4  | 44726594  | 44726595  | 0.357176  | rs10517102 | 3.33   | rs17600797 | 0.296986  | 6.18   | -2.6118  | 374 | 1   | top1  | -2.6118   | 0.009007 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000018189.12 | 4  | 70704800  | 70704801  | 0.026654  | rs11941079 | 4.36   | rs4694090  | -0.006704 | -2.63  | 1.9763   | 374 | 1   | lasso | -1.9763   | 0.048122 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000163743.13 | 4  | 75514216  | 75514217  | -0.009069 | rs17220803 | -4.39  | rs2126852  | -0.00255  | 2.48   | -2.13    | 426 | 1   | top1  | -2.13     | 0.033172 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000174792.10 | 4  | 75556047  | 75556048  | 0.51231   | rs17220803 | -4.2   | rs2061742  | 0.236777  | 5.3    | 2.6176   | 430 | 1   | top1  | 2.6176    | 0.008855 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000138769.10 | 4  | 75630715  | 75630716  | 0.06698   | rs17220803 | -3.86  | rs6531940  | -0.001516 | 2.71   | 2.1539   | 441 | 1   | top1  | 2.1539    | 0.031249 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000138757.14 | 4  | 75724524  | 75724525  | 0.162259  | rs7685696  | 5.65   | rs7679851  | 0.090571  | -3.79  | 2.9453   | 459 | 4   | lasso | -3.1606   | 0.001574 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000138768.14 | 4  | 75724592  | 75724593  | 0.076225  | rs7685696  | 5.65   | rs6531940  | -0.007511 | -2.95  | 2.164    | 459 | 11  | lasso | -2.1759   | 0.029563 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000138750.14 | 4  | 76148514  | 76148515  | 0.574918  | rs17236661 | -5.83  | rs1465920  | 0.303717  | 6.26   | 1.246    | 484 | 43  | enet  | 1.9887    | 0.046732 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000189157.13 | 4  | 76214039  | 76214040  | 0.689426  | rs17236661 | -5.83  | rs1876539  | 0.453586  | -7.27  | 4.5102   | 482 | 16  | enet  | -3.5345   | 0.000409 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000176018.12 | 5  | 90529583  | 90529584  | 0.135937  | rs6865858  | 2.86   | rs9293538  | -0.001141 | -3.12  | 2.024    | 378 | 13  | enet  | -2.5462   | 0.01089  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000145730.20 | 5  | 102753980 | 102753981 | -0.007991 | rs17154942 | -3.46  | rs26256    | -0.008629 | -2.45  | 0.5252   | 301 | 301 | susie | -2.702    | 0.00689  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000248757.2  | 5  | 103541984 | 103541985 | -0.064837 | rs2288788  | -3.7   | rs674726   | 0.040035  | 2.05   | -3.0091  | 382 | 1   | top1  | -3.0091   | 0.00262  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000164406.7  | 5  | 132872321 | 132872322 | 0.145433  | rs28903085 | -2.85  | rs6596118  | -0.008544 | -3.23  | -0.656   | 403 | 12  | enet  | 2.2438    | 0.02484  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000072364.12 | 5  | 132963633 | 132963634 | 0.03397   | rs10793814 | -3.38  | rs7736339  | 0.012974  | -3.25  | 2.039    | 388 | 1   | top1  | -2.039    | 0.04145  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000204789.4  | 6  | 27360220  | 27360221  | 0.219523  | rs6918131  | -4.23  | rs9295740  | 0.087805  | 3.98   | 2.5403   | 382 | 11  | lasso | 2.1189    | 0.0341   | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000124613.8  | 6  | 27374614  | 27374615  | 0.364521  | rs6918131  | -4.23  | rs6920362  | 0.447491  | -1.19  | -4.114   | 390 | 1   | top1  | 4.114     | 3.89E-05 | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000271755.1  | 6  | 27406963  | 27406964  | 0.088348  | rs6918131  | -4.23  | rs7509     | 0.10071   | -3.57  | -2.608   | 403 | 1   | top1  | 2.608     | 0.00911  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000244349.1  | 6  | 28988299  | 28988300  | 0.034941  | rs4713216  | 2.37   | rs4713216  | -0.008588 | 1.64   | 2.37     | 9   | 6   | enet  | 2.9719    | 0.00296  | Brain_Spinal_cord_cervical_c-1.nofilter |
| ENSG00000174384.9  | 7  | 73093656  | 73093657  | 0.078333  | rs         |        |            |           |        |          |     |     |       |           |          |                                         |

|                     |    |           |           |           |            |       |            |           |        |         |     |     |       |          |          |                                 |
|---------------------|----|-----------|-----------|-----------|------------|-------|------------|-----------|--------|---------|-----|-----|-------|----------|----------|---------------------------------|
| ENSG000000143258.15 | 1  | 161159449 | 161159450 | -0.048973 | rs1801274  | -4.09 | rs12731669 | 0.053294  | -1.93  | -2.255  | 377 | 1   | top1  | 2.255    | 0.02413  | Brain_Substantia_nigra.nofilter |
| ENSG000000143751.9  | 1  | 225999330 | 225999331 | -0.06162  | rs10915933 | -2.86 | rs10915988 | -0.007568 | 3.08   | 2.09    | 385 | 2   | lasso | 2.0908   | 0.03654  | Brain_Substantia_nigra.nofilter |
| ENSG000000054282.15 | 1  | 243256033 | 243256034 | 0.319598  | rs10927035 | 4.3   | rs2171975  | -0.008481 | 3.5    | 2.324   | 285 | 18  | enet  | 2.8596   | 0.00424  | Brain_Substantia_nigra.nofilter |
| ENSG000000236031.1  | 1  | 243545597 | 243545598 | 0.068372  | rs10927035 | 4.34  | rs11583980 | -0.002055 | 2.6    | -2.413  | 300 | 1   | top1  | -2.413   | 0.01582  | Brain_Substantia_nigra.nofilter |
| ENSG000000165895.17 | 11 | 100738442 | 100738443 | 0.01513   | rs17737234 | 3.27  | rs11224242 | -0.0102   | -2.95  | -0.0236 | 528 | 528 | susie | 1.9725   | 0.0486   | Brain_Substantia_nigra.nofilter |
| ENSG000000066084.12 | 12 | 50505106  | 50505107  | 0.139188  | rs10783342 | 2.99  | rs7297421  | 0.0864    | 3.49   | 2.841   | 296 | 1   | top1  | 2.841    | 0.0045   | Brain_Substantia_nigra.nofilter |
| ENSG000000011465.16 | 12 | 91183122  | 91183123  | -0.002413 | rs11106213 | 2.99  | rs10506991 | 0.00814   | 2.42   | -2.125  | 388 | 1   | top1  | -2.125   | 0.0336   | Brain_Substantia_nigra.nofilter |
| ENSG000000075415.12 | 12 | 98593590  | 98593591  | 0.10442   | rs17028572 | 2.97  | rs7964472  | -0.0102   | -2.93  | -2.3871 | 442 | 442 | susie | 2.2006   | 0.0278   | Brain_Substantia_nigra.nofilter |
| ENSG000000089022.13 | 12 | 111843102 | 111843103 | 0.182353  | rs7979255  | -1.87 | rs11611847 | -0.00456  | -2.88  | -0.895  | 200 | 14  | enet  | 2.1683   | 0.0301   | Brain_Substantia_nigra.nofilter |
| ENSG000000165621.8  | 13 | 96994729  | 96994730  | 0.478553  | rs4771267  | 3.7   | rs19333009 | 0.22786   | 3.98   | 2.035   | 355 | 355 | susie | 2.148    | 0.0317   | Brain_Substantia_nigra.nofilter |
| ENSG000000258548.5  | 14 | 27612587  | 27612588  | 0.172623  | rs8016862  | 3.24  | rs7149088  | 0.01223   | 3.47   | -2.087  | 339 | 6   | lasso | -2.057   | 0.0397   | Brain_Substantia_nigra.nofilter |
| ENSG000000186960.10 | 14 | 28772703  | 28772704  | 0.012886  | rs4981680  | -2.94 | rs10148671 | -0.00876  | 2.84   | -0.826  | 300 | 300 | susie | -2.1759  | 0.0296   | Brain_Substantia_nigra.nofilter |
| ENSG000000274762.1  | 14 | 28818740  | 28818741  | 0.040941  | rs4981680  | -2.94 | rs1211864  | 0.02051   | 3.11   | -2.278  | 296 | 1   | top1  | -2.278   | 0.0227   | Brain_Substantia_nigra.nofilter |
| ENSG000000150527.16 | 14 | 39265283  | 39265284  | 0.043057  | rs17693279 | 3.53  | rs11847313 | -0.00927  | 2.61   | 2.341   | 375 | 3   | lasso | 2.248    | 0.0246   | Brain_Substantia_nigra.nofilter |
| ENSG000000165502.6  | 14 | 49620684  | 49620685  | 0.656826  | rs8021453  | 2.85  | rs7146248  | 0.29182   | -5.94  | 2.194   | 382 | 382 | susie | -2.2412  | 0.025    | Brain_Substantia_nigra.nofilter |
| ENSG000000255511.1  | 16 | 1964094   | 1964095   | 0.588711  | rs2064289  | -4.39 | rs2302178  | 0.285411  | 5.5    | -2.562  | 446 | 446 | susie | -3.492   | 0.000479 | Brain_Substantia_nigra.nofilter |
| ENSG000000167964.12 | 16 | 2140802   | 2140803   | 0.069545  | rs8058190  | 4.35  | rs3211995  | -0.0059   | -3.14  | 3.179   | 361 | 1   | top1  | -3.179   | 0.001478 | Brain_Substantia_nigra.nofilter |
| ENSG000000266469.1  | 17 | 39401792  | 39401793  | 0.071506  | rs4252607  | 2.94  | rs16541    | 0.004547  | -3.09  | -2.327  | 330 | 3   | lasso | 2.394    | 0.0167   | Brain_Substantia_nigra.nofilter |
| ENSG000000189050.15 | 17 | 59964760  | 59964761  | -0.002449 | rs17580385 | -2.45 | rs4968382  | 0.034232  | -1.78  | 1.966   | 243 | 1   | top1  | -1.966   | 0.0493   | Brain_Substantia_nigra.nofilter |
| ENSG000000270587.1  | 17 | 63611183  | 63611184  | 0.060488  | rs4465659  | 2.41  | rs7215551  | 0.040291  | 2.99   | 2.3269  | 277 | 1   | top1  | 2.3269   | 0.02     | Brain_Substantia_nigra.nofilter |
| ENSG000000167220.11 | 18 | 47150519  | 47150520  | 0.042491  | rs4624285  | -2.49 | rs2684816  | -0.0098   | 2.87   | 2.479   | 472 | 1   | lasso | 2.47917  | 0.0132   | Brain_Substantia_nigra.nofilter |
| ENSG000000243234.1  | 19 | 57953758  | 57953759  | 0.191687  | rs260445   | 3.49  | rs2449632  | -0.00622  | -3.38  | -2.248  | 467 | 7   | lasso | 2.7151   | 0.00663  | Brain_Substantia_nigra.nofilter |
| ENSG000000177025.3  | 19 | 57974533  | 57974534  | 0.167545  | rs260445   | 3.48  | rs257676   | -0.01012  | -3.16  | -1.708  | 455 | 455 | susie | 1.9816   | 0.04752  | Brain_Substantia_nigra.nofilter |
| ENSG000000278129.1  | 19 | 58278950  | 58278951  | -0.011618 | rs260461   | 3.51  | rs2449632  | -0.00935  | 3.02   | -2.127  | 346 | 1   | lasso | -2.1274  | 0.03338  | Brain_Substantia_nigra.nofilter |
| ENSG000000182318.5  | 19 | 58327018  | 58327019  | 0.052247  | rs260461   | 3.54  | rs16988659 | 0.01793   | 2.56   | 2.033   | 330 | 1   | top1  | 2.033    | 0.04206  | Brain_Substantia_nigra.nofilter |
| ENSG000000271228.1  | 2  | 32013060  | 32013061  | 0.272943  | rs10181198 | -2.62 | rs612224   | 0.00427   | 3.34   | -1.8508 | 264 | 264 | susie | -2.0823  | 0.03731  | Brain_Substantia_nigra.nofilter |
| ENSG000000152133.14 | 2  | 37084045  | 37084451  | 0.068264  | rs17019662 | 2.87  | rs10173568 | -0.008451 | -2.89  | -2.492  | 502 | 1   | lasso | -2.492   | 0.0127   | Brain_Substantia_nigra.nofilter |
| ENSG000000115380.19 | 2  | 55924138  | 55924139  | 0.564156  | rs6545522  | 3.38  | rs1432547  | 0.030823  | 3.72   | -2.086  | 466 | 23  | enet  | 2.5485   | 0.01082  | Brain_Substantia_nigra.nofilter |
| ENSG000000271889.1  | 2  | 61162104  | 61162105  | 0.046617  | rs778755   | 3.63  | rs6545895  | -0.008675 | 2.48   | -2.9183 | 311 | 311 | susie | -2.7374  | 0.00619  | Brain_Substantia_nigra.nofilter |
| ENSG000000273302.1  | 2  | 61199978  | 61199979  | 0.033472  | rs778755   | 3.65  | rs11691111 | -0.010186 | 3.03   | 0.909   | 303 | 303 | susie | -2.8884  | 0.00387  | Brain_Substantia_nigra.nofilter |
| ENSG000000270820.5  | 2  | 61471187  | 61471188  | 0.052026  | rs778755   | 3.69  | rs2600671  | -0.009907 | -2.55  | 2.695   | 299 | 2   | lasso | -2.6957  | 0.00702  | Brain_Substantia_nigra.nofilter |
| ENSG000000115593.14 | 2  | 88067779  | 88067780  | 0.096     | rs6712707  | -2.94 | rs6722564  | 0.009083  | 3.15   | 2.4168  | 242 | 1   | top1  | 2.4168   | 0.01566  | Brain_Substantia_nigra.nofilter |
| ENSG000000204406.12 | 2  | 14802101  | 14802101  | 0.07897   | rs1234404  | -3.6  | rs4662293  | 0.050523  | -3.35  | 2.987   | 329 | 1   | top1  | -2.987   | 0.00282  | Brain_Substantia_nigra.nofilter |
| ENSG000000153246.12 | 2  | 160062609 | 160062610 | 0.28911   | rs9917155  | 3.68  | rs12998587 | -0.002632 | 3.66   | 2.207   | 426 | 1   | top1  | 2.207    | 0.02731  | Brain_Substantia_nigra.nofilter |
| ENSG000000232479.2  | 2  | 202924608 | 202924609 | 0.033424  | rs4675317  | -2.96 | rs2255047  | 0.00087   | 2.46   | -1.9837 | 248 | 1   | lasso | -1.9837  | 0.04729  | Brain_Substantia_nigra.nofilter |
| ENSG00000021826.14  | 2  | 210477681 | 210477682 | 0.22817   | rs186471   | -2.29 | rs7580498  | -0.007474 | -3.05  | 1.698   | 348 | 348 | susie | -2.3175  | 0.02048  | Brain_Substantia_nigra.nofilter |
| ENSG000000101331.15 | 20 | 32010449  | 32010450  | 0.103739  | rs4911532  | 2.47  | rs1742981  | -0.00588  | 3.11   | -0.375  | 302 | 11  | enet  | 1.999    | 0.0456   | Brain_Substantia_nigra.nofilter |
| ENSG000000101460.12 | 20 | 34546853  | 34546854  | 0.151071  | rs12624640 | 3.2   | rs6088521  | 0.00491   | 3.12   | 2.973   | 303 | 9   | enet  | 2.001    | 0.0454   | Brain_Substantia_nigra.nofilter |
| ENSG000000142207.6  | 21 | 32393025  | 32393026  | 0.271751  | rs10470164 | -3.33 | rs2833786  | -0.0015   | -4.01  | -0.159  | 486 | 15  | enet  | 2.2649   | 0.02352  | Brain_Substantia_nigra.nofilter |
| ENSG000000159110.19 | 21 | 33229900  | 33229901  | -0.019916 | rs2834066  | 3.17  | rs2834028  | -0.00997  | 3.13   | 2.891   | 451 | 1   | lasso | 2.891    | 0.00384  | Brain_Substantia_nigra.nofilter |
| ENSG000000142166.12 | 21 | 33324476  | 33324477  | 0.225178  | rs2834066  | 3.17  | rs2000461  | -0.00807  | -3.1   | 2.297   | 435 | 2   | lasso | -2.1456  | 0.03191  | Brain_Substantia_nigra.nofilter |
| ENSG000000183977.13 | 3  | 20012329  | 20012330  | -0.083373 | rs1464294  | 2.98  | rs11923928 | 0.0457    | -2     | -2.035  | 415 | 1   | top1  | 2.03482  | 0.04187  | Brain_Substantia_nigra.nofilter |
| ENSG000000090907.21 | 3  | 51968409  | 51968410  | -0.043343 | rs1060330  | -2.64 | rs730050   | 0.000271  | 3.58   | -2.458  | 235 | 1   | lasso | -2.45819 | 0.01396  | Brain_Substantia_nigra.nofilter |
| ENSG000000164087.7  | 3  | 52154689  | 52154690  | 0.004806  | rs17052200 | 2.85  | rs1403102  | 0.0075    | 2.15   | -2.153  | 301 | 1   | top1  | -2.153   | 0.03132  | Brain_Substantia_nigra.nofilter |
| ENSG000000168237.17 | 3  | 52287088  | 52287089  | 0.113156  | rs6774097  | 2.83  | rs17259762 | -0.00455  | 3.34   | -1.314  | 336 | 5   | lasso | -2.33197 | 0.0197   | Brain_Substantia_nigra.nofilter |
| ENSG000000163636.10 | 3  | 64024009  | 64024010  | 0.142494  | rs13068250 | 3.38  | rs13093232 | -0.00806  | 3.17   | -2.576  | 562 | 3   | lasso | -2.25284 | 0.02427  | Brain_Substantia_nigra.nofilter |
| ENSG000000239519.1  | 3  | 86028006  | 86028007  | 0.296708  | rs6549078  | -3.52 | rs12486982 | 0.236     | 5.38   | 2.06    | 308 | 308 | susie | 2.03984  | 0.04137  | Brain_Substantia_nigra.nofilter |
| ENSG000000273437.1  | 3  | 129163939 | 129163940 | 0.13808   | rs11709852 | 3.13  | rs2929860  | -0.00662  | -2.94  | 2.579   | 310 | 2   | lasso | -2.59511 | 0.00946  | Brain_Substantia_nigra.nofilter |
| ENSG000000224097.5  | 4  | 39480254  | 39480255  | 0.374849  | rs2566103  | 2.38  | rs13144464 | 0.132     | 4.15   | 2.205   | 367 | 1   | top1  | 2.205    | 0.02745  | Brain_Substantia_nigra.nofilter |
| ENSG000000180610.10 | 4  | 39771370  | 39771371  | 0.025374  | rs11723907 | 2.27  | rs13144464 | -0.0101   | -2.87  | 2.205   | 379 | 1   | lasso | -2.205   | 0.02745  | Brain_Substantia_nigra.nofilter |
| ENSG000000177752.14 | 4  | 44678425  | 44678426  | 0.127149  | rs10517102 | 3.57  | rs11717069 | -0.00996  | -2.78  | 2.1229  | 368 | 20  | enet  | -2.607   | 0.00913  | Brain_Substantia_nigra.nofilter |
| ENSG000000151806.13 | 4  | 44678556  | 44678557  | 0.381981  | rs10517102 | 3.57  | rs11734057 | 0.177     | -4.89  | -2.615  | 368 | 368 | susie | 2.777    | 0.00549  | Brain_Substantia_nigra.nofilter |
| ENSG000000163281.11 | 4  | 44726594  | 44726595  | 0.174845  | rs10517102 | 3.34  | rs1439354  | 0.0742    | 3.62   | -3.106  | 371 | 1   | top1  | -3.106   | 0.0019   | Brain_Substantia_nigra.nofilter |
| ENSG000000189157.13 | 4  | 76214039  | 76214040  | 0.448289  | rs17236661 | -5.83 | rs1876539  | 0.181     | -5.56  | 4.5102  | 482 | 13  | enet  | -2.5     | 0.01242  | Brain_Substantia_nigra.nofilter |
| ENSG000000188517.14 | 4  | 109302656 | 109302657 | 0.149494  | rs1000954  | -3.24 | rs965935   | -0.000788 | -2.64  | -2.466  | 375 | 1   | top1  | -2.466   | 0.01366  | Brain_Substantia_nigra.nofilter |
| ENSG000000109452.12 | 4  | 142847431 | 142847432 | -0.018571 | rs1391097  | 2.83  | rs11938760 | 0.0244    | 2.9    | 2.496   | 287 | 1   | top1  | 2.496    | 0.01256  | Brain_Substantia_nigra.nofilter |
| ENSG000000113356.11 | 5  | 90471747  | 90471748  | 0.158661  | rs16868974 | 2.88  | rs2443068  | 0.000773  | -3.34  | -2.179  | 362 | 1   | top1  | 2.179    | 0.0293   | Brain_Substantia_nigra.nofilter |
| ENSG000000248323.5  | 5  | 91314330  | 91314331  | 0.011619  | rs4458614  | -2.9  | rs17570760 | 0.007719  | -2.83  | -2.122  | 323 | 1   | top1  | 2.122    | 0.0338   | Brain_Substantia_nigra.nofilter |
| ENSG000000145730.20 | 5  | 102753980 | 102753981 | 0.399278  | rs17154942 | -3.46 | rs13184450 | -0.00976  | -2.34  | 1.595   | 304 | 304 | susie | -2.7265  | 0.0064   | Brain_Substantia_nigra.nofilter |
| ENSG000000124789.11 | 6  | 17688617  | 17688618  | -6.50E-05 | rs1924466  | -2.95 | rs3734234  | -0.010061 | -2.9   | -2.1107 | 378 | 1   | lasso | -2.1107  | 0.0348   | Brain_Substantia_nigra.nofilter |
| ENSG000000204789.4  | 6  | 27360220  | 27360221  | 0.105488  | rs6918131  | -4.23 | rs200991   | 0.155554  | 4.026  | 2.4952  | 390 | 1   | top1  | 2.4952   | 0.0126   | Brain_Substantia_nigra.nofilter |
| ENSG000000124613.8  | 6  | 27374614  | 27374615  | 0.476632  | rs6918131  | -4.23 | rs6920362  | 0.232209  | -5.664 | -4.114  | 397 | 397 | susie | 4.136    | 3.53E-05 | Brain_Substantia_nigra.nofilter |
| ENSG000000271755.1  | 6  | 27406963  | 27406964  | 0.138815  | rs6918131  | -4.23 | rs2294308  | 0.079733  | -3.574 | -3.327  | 410 | 1   | top1  | 3.327    | 0.000878 | Brain_Substantia_nigra.nofilter |
| ENSG000000233225.3  | 7  | 39833793  | 39833     |           |            |       |            |           |        |         |     |     |       |          |          |                                 |

|                   |   |          |          |           |            |       |            |         |      |        |     |   |       |        |        |                                 |
|-------------------|---|----------|----------|-----------|------------|-------|------------|---------|------|--------|-----|---|-------|--------|--------|---------------------------------|
| ENSG00000107282.7 | 9 | 69672305 | 69672306 | -0.217346 | rs10511972 | -3.02 | rs10511975 | 0.01412 | 2.09 | -2.367 | 495 | 1 | top1  | -2.367 | 0.0179 | Brain_Substantia_nigra.nofilter |
| ENSG00000127083.7 | 9 | 92424460 | 92424461 | 0.012916  | rs710161   | 2.44  | rs2296665  | 0.02227 | 2.56 | 2.362  | 378 | 1 | lasso | 2.362  | 0.0182 | Brain_Substantia_nigra.nofilter |



Supplemental Table 10: Significant Enigma NIDPs associated with clinical Parkinson's Disease Mapping to NeuroImage phenotypes

| ROI                     | type               | pvalue | cohens d | beta    | standard error | Lower CI | Upper CI | percent diff | N Parkinson's | N Healthy Controls | NeuroImage NIDP name                            |
|-------------------------|--------------------|--------|----------|---------|----------------|----------|----------|--------------|---------------|--------------------|-------------------------------------------------|
| L Banks STS             | thickness          | <0.001 | -0.104   | -0.026  | 0.007          | -0.04    | -0.012   | -1.105       | 2061          | 1081               | aparc-Desikan_lh_thickness_bankssts             |
| R Banks STS             | thickness          | <0.001 | -0.122   | -0.031  | 0.007          | -0.045   | -0.017   | -1.261       | 2208          | 1129               | aparc-Desikan_rh_thickness_bankssts             |
| L Cuneus                | thickness          | <0.001 | -0.112   | -0.021  | 0.006          | -0.032   | -0.01    | -1.157       | 2142          | 1118               | aparc-Desikan_lh_thickness_cuneus               |
| R Cuneus                | thickness          | <0.001 | -0.108   | -0.022  | 0.006          | -0.033   | -0.011   | -1.225       | 2110          | 1085               | aparc-Desikan_rh_thickness_cuneus               |
| R Entorhinal            | thickness          | <0.001 | -0.1     | -0.051  | 0.014          | -0.079   | -0.024   | -1.51        | 2201          | 1145               | aparc-Desikan_rh_thickness_entorhinal           |
| L Fusiform              | thickness          | <0.001 | -0.198   | -0.043  | 0.006          | -0.055   | -0.03    | -1.638       | 2274          | 1170               | aparc-Desikan_lh_thickness_fusiform             |
| R Fusiform              | thickness          | <0.001 | -0.117   | -0.033  | 0.007          | -0.047   | -0.019   | -1.26        | 2288          | 1172               | aparc-Desikan_rh_thickness_fusiform             |
| L Inferior parietal     | thickness          | <0.001 | -0.188   | -0.036  | 0.006          | -0.047   | -0.025   | -1.549       | 2213          | 1128               | aparc-Desikan_lh_thickness_inferiorparietal     |
| R Inferior parietal     | thickness          | <0.001 | -0.194   | -0.04   | 0.006          | -0.051   | -0.029   | -1.694       | 2225          | 1153               | aparc-Desikan_rh_thickness_inferiorparietal     |
| L Inferior temporal     | thickness          | <0.001 | -0.193   | -0.042  | 0.007          | -0.055   | -0.029   | -1.578       | 2211          | 1110               | aparc-Desikan_lh_thickness_inferiortemporal     |
| R Inferior temporal     | thickness          | <0.001 | -0.141   | -0.033  | 0.007          | -0.046   | -0.02    | -1.231       | 2237          | 1129               | aparc-Desikan_rh_thickness_inferiortemporal     |
| L Isthmus cinguli       | thickness          | <0.001 | -0.177   | -0.042  | 0.008          | -0.057   | -0.027   | -1.792       | 2302          | 1173               | aparc-Desikan_lh_thickness_isthmuscingulate     |
| R Isthmus cinguli       | thickness          | <0.001 | -0.178   | -0.044  | 0.008          | -0.059   | -0.029   | -1.869       | 2297          | 1175               | aparc-Desikan_rh_thickness_isthmuscingulate     |
| L Lateral occipital     | thickness          | <0.001 | -0.166   | -0.03   | 0.006          | -0.042   | -0.019   | -1.44        | 2227          | 1151               | aparc-Desikan_lh_thickness_lateraloccipital     |
| R Lateral occipital     | thickness          | <0.001 | -0.167   | -0.033  | 0.006          | -0.045   | -0.021   | -1.523       | 2246          | 1157               | aparc-Desikan_rh_thickness_lateraloccipital     |
| L Lateral orbitofrontal | thickness          | <0.001 | -0.125   | -0.028  | 0.006          | -0.04    | -0.015   | -1.089       | 2305          | 1168               | aparc-Desikan_lh_thickness_lateralorbitofrontal |
| R Lateral orbitofrontal | thickness          | <0.001 | -0.141   | -0.034  | 0.006          | -0.046   | -0.021   | -1.354       | 2304          | 1169               | aparc-Desikan_rh_thickness_lateralorbitofrontal |
| L Lingual               | thickness          | <0.001 | -0.111   | -0.019  | 0.005          | -0.029   | -0.009   | -0.992       | 2244          | 1158               | aparc-Desikan_lh_thickness_lingual              |
| R Lingual               | thickness          | <0.001 | -0.094   | -0.018  | 0.005          | -0.029   | -0.008   | -0.927       | 2203          | 1126               | aparc-Desikan_rh_thickness_lingual              |
| L Middle temporal       | thickness          | <0.001 | -0.156   | -0.036  | 0.007          | -0.049   | -0.022   | -1.317       | 2101          | 1096               | aparc-Desikan_lh_thickness_middletemporal       |
| R Middle temporal       | thickness          | <0.001 | -0.134   | -0.033  | 0.007          | -0.046   | -0.02    | -1.197       | 2224          | 1136               | aparc-Desikan_rh_thickness_middletemporal       |
| L Paracentral           | thickness          | <0.001 | -0.109   | -0.025  | 0.007          | -0.038   | -0.012   | -1.116       | 2294          | 1170               | aparc-Desikan_lh_thickness_paracentral          |
| R Paracentral           | thickness          | <0.001 | -0.122   | -0.045  | 0.012          | -0.068   | -0.021   | -1.708       | 2308          | 1169               | aparc-Desikan_rh_thickness_paracentral          |
| L Parahippocampal       | thickness          | <0.001 | -0.108   | -0.035  | 0.01           | -0.055   | -0.016   | -1.371       | 2296          | 1173               | aparc-Desikan_lh_thickness parahippocampal      |
| R Parahippocampal       | thickness          | <0.001 | -0.11    | -0.028  | 0.008          | -0.043   | -0.013   | -1.077       | 2297          | 1171               | aparc-Desikan_rh_thickness parahippocampal      |
| L Pars orbitalis        | thickness          | <0.001 | -0.11    | -0.019  | 0.005          | -0.029   | -0.009   | -0.971       | 2175          | 1130               | aparc-Desikan_lh_thickness_parsorbitalis        |
| R Postcentral           | thickness          | <0.001 | -0.104   | -0.02   | 0.005          | -0.03    | -0.01    | -0.998       | 2174          | 1134               | aparc-Desikan_rh_thickness_postcentral          |
| R Posterior cingulate   | thickness          | <0.001 | -0.156   | -0.036  | 0.006          | -0.048   | -0.023   | -1.503       | 2308          | 1174               | aparc-Desikan_rh_thickness_posteriorcingulate   |
| L Precentral            | thickness          | <0.001 | -0.104   | -0.023  | 0.006          | -0.035   | -0.01    | -0.944       | 2205          | 1126               | aparc-Desikan_lh_thickness_precentral           |
| L Precuneus             | thickness          | <0.001 | -0.156   | -0.031  | 0.005          | -0.042   | -0.02    | -1.373       | 2301          | 1173               | aparc-Desikan_lh_thickness_precuneus            |
| R Precuneus             | thickness          | <0.001 | -0.193   | -0.038  | 0.006          | -0.049   | -0.027   | -1.679       | 2304          | 1174               | aparc-Desikan_rh_thickness_precuneus            |
| L Superior frontal      | thickness          | <0.001 | -0.104   | -0.02   | 0.006          | -0.031   | -0.009   | -0.784       | 2257          | 1163               | aparc-Desikan_lh_thickness_superiorfrontal      |
| R Superior frontal      | thickness          | <0.001 | -0.11    | -0.022  | 0.006          | -0.033   | -0.011   | -0.879       | 2258          | 1163               | aparc-Desikan_rh_thickness_superiorfrontal      |
| L Superior parietal     | thickness          | <0.001 | -0.145   | -0.028  | 0.005          | -0.038   | -0.017   | -1.335       | 2233          | 1150               | aparc-Desikan_lh_thickness_superiorparietal     |
| R Superior parietal     | thickness          | <0.001 | -0.174   | -0.036  | 0.005          | -0.046   | -0.025   | -1.709       | 2254          | 1161               | aparc-Desikan_rh_thickness_superiorparietal     |
| L Supramarginal         | thickness          | <0.001 | -0.131   | -0.026  | 0.006          | -0.037   | -0.014   | -1.08        | 2182          | 1118               | aparc-Desikan_lh_thickness_supramarginal        |
| R Supramarginal         | thickness          | <0.001 | -0.153   | -0.031  | 0.006          | -0.042   | -0.019   | -1.28        | 2209          | 1148               | aparc-Desikan_rh_thickness_supramarginal        |
| L Frontal pole          | surface area       | <0.001 | -0.167   | -6.53   | 1.2            | -8.89    | -4.17    | -3.081       | 2307          | 1169               | aparc-Desikan_lh_area_frontalpole               |
| L Lateral occipital     | surface area       | <0.001 | -0.118   | -69.95  | 20.05          | -109.27  | -30.63   | -1.477       | 2229          | 1151               | aparc-Desikan_lh_area_lateraloccipital          |
| L Amygdala              | subcortical volume | <0.001 | -0.13    | -33.64  | 7.99           | -49.3    | -17.97   | -2.267       | 2284          | 1158               | aseg_lh_volume_Amygdala                         |
| L Putamen               | subcortical volume | <0.001 | -0.136   | -101.89 | 24.2           | -149.34  | -54.44   | -2.031       | 2163          | 1068               | aseg_lh_volume_Putamen                          |
| R Putamen               | subcortical volume | <0.001 | -0.135   | -96.94  | 22.76          | -141.56  | -52.31   | -2.014       | 2230          | 1125               | aseg_rh_volume_Putamen                          |
| L Thalamus              | subcortical volume | <0.001 | 0.131    | 127.97  | 28.29          | 72.5     | 183.44   | 1.785        | 2193          | 1125               | aseg_lh_volume_Thalamus-Propri                  |

Supplemental Table 11: Significant PD transcriptomic associations with Enigma NIDPs derived from clinical Parkinson's disease

| gene            | gene_name | zscore       | effect_size  | pvalue   | gwas_phenotype                           | training_model                           |
|-----------------|-----------|--------------|--------------|----------|------------------------------------------|------------------------------------------|
| ENSG00000169612 | RAMAC     | 5.004438704  | 0.097665097  | 5.60E-07 | aparc-Desikan_rh_thickness_supramarginal | JTI_Adrenal_Gland                        |
| ENSG00000184110 | EIF3C     | -4.885449049 | -0.123466948 | 1.03E-06 | aseg_rh_volume_Putamen                   | JTI_Brain_Anterior_cingulate_cortex_BA24 |
| ENSG00000100994 | PYGB      | -4.894762621 | -0.090966456 | 9.84E-07 | aseg_lh_volume_Putamen                   | JTI_Brain_Spinal_cord_cervical_c-1       |
| ENSG00000100994 | PYGB      | -5.243474982 | -0.097213407 | 1.58E-07 | aseg_lh_volume_Thalamus-Propor           | JTI_Brain_Spinal_cord_cervical_c-1       |
| ENSG00000100994 | PYGB      | -5.321507979 | -0.145728055 | 1.03E-07 | aseg_lh_volume_Putamen                   | JTI_Brain_Substantia_nigra               |
| ENSG00000196993 | NPIP9     | 5.749922776  | 0.185711084  | 8.93E-09 | aseg_rh_volume_Putamen                   | JTI_Brain_Substantia_nigra               |
| ENSG00000184110 | EIF3C     | -4.948668543 | -0.118499686 | 7.47E-07 | aseg_rh_volume_Putamen                   | JTI_Brain_Substantia_nigra               |
| ENSG00000169612 | RAMAC     | 5.05301336   | 0.09439931   | 4.35E-07 | aparc-Desikan_rh_thickness_supramarginal | JTI_Colon_Sigmoid                        |
| ENSG00000196993 | NPIP9     | 5.646700818  | 0.13538579   | 1.64E-08 | aseg_rh_volume_Putamen                   | JTI_Colon_Sigmoid                        |
| ENSG00000196993 | NPIP9     | 5.722773293  | 0.144778974  | 1.05E-08 | aseg_rh_volume_Putamen                   | JTI_Colon_Transverse                     |