

Suppl table 5: List of 7 identified genes annotated through gene-disease association analysis

Gene Name	Gene ID	Protein ID	Name	Related Disease Name	Related Disease Class
CAMK1D	ENSG00000183049	Q8IU85	calcium/calmodulin dependent protein kinase type 1D	Alzheimer's disease ; lupus erythematosus; schizophrenia; smoking behaviors	nervous system diseases; mental disorders; mental or behavioral dysfunction; immune system diseases
GAB2	ENSG00000033327	Q9UQC2	GRB2-associated-binding protein 2	Alzheimer's disease; Alzheimer disease, Late onset; neuritis;	nervous system diseases; mental disorders
IFNAR1	ENSG00000142166	P17181	interferon alpha and beta receptor subunt 1	mental depression; depressive disorder; depressive symptoms; drug-induced depressive state; Encephalitis; Rasmussen subacute encephalitis; Rasmussen syndrome; neurologic signs; multiple sclerosis; autoimmune disease; asthma. total IgE. SPT	behavior and behavior mechanisms; nervous system diseases; mental disorders; immune system diseases
KCNJ15	ENSG00000157551	Q99712	ATP-sensitive inward rectifier potassium channel 15	Juvenile arthritis; Juvenile psoriatic arthritis; Juvenile-Onset Still Disease	immune system diseases
LYN	ENSG00000166501	P07948	LYN proto-oncogene, Src family tyrosine kinase	lupus erythematosus, systemic; parkinson disease 2, autosomal recessive juvenile	nervous system diseases; mental disorders; behavior and behavior mechanisms; immune system diseases
MDM2	ENSG00000135679	Q00987	MDM2 proto-oncogene; E3 ubiquitin-protein ligase Mdm2	arthritis rheumatoid; autoimmune diseases; Alzheimer's disease; hyperactive behavior; epilepsy, temporal lobe; seizures; Post-Traumatic Stress Disorder; schizophrenia	nervous system diseases; mental disorders; behavior and behavior mechanisms; immune system diseases
PRKCB	ENSG00000166501	P05771	protein kinase C beta type	autistic disorder; autism spectrum disorders; major depressive disorder; depressive disorder; unipolar depression; mental depression; status epilepticus; lupus erythematosus, systemic; Alzheimer's disease; speech sound disorders	nervous system diseases; mental disorders; behavior and behavior mechanisms; immune system diseases