Supplementary Table 2

Purpose	Name	Sequence
Marble DNA genotyping	Marble_gety_F	AGTCCAACTGGCCTTAAACT
	Marble_gety_R	GTATAACCAAAATCCGCTCA
Marble cDNA genotyping	Marble_cDNA_F	GATAGCTGAGCTCTTTACGG
	Marble_cDNA_R	TCATCTGCAGAGAGAAAGGT
BAC transgene genotyping	BAC_flag_F	ACAAGGACGATGACGATAAG
	BAC_flag_R	AAAGTCACCATGCCTACATC
loxP site genotyping	LF	GACCGAGGCATACGGTACTTTTACG
	LR	ACGTCATGTCATTCTTTCCAGCCGC
Cre genotyping	Cre_F	TCGCGATTATCTTCTATATCTTCAG
	Cre_R	GCTCGACCAGTTTAGTTACCC
L1224R genotyping	L1224R_F	CGCAGTGACTAGCCCATAG
	L1224R_R	AATGCAGAACACTAGCAAGG
qPCR for mouse Vps15	qPCR_mVps15_F	CCGCTTGTCGACCTGAATAG
	qPCR_mVps15_R	ACAAAGGTACGCCTTCCGTA
qPCR for mouse Vps34	qPCR_mVps34_F	CATACAAGGTGTTAGCCACTAGC
	qPCR_mVps34_R	AAAGTTCTGAATGCTTCCCTCTG
qPCR for mouse Beclin1	qPCR_mBeclin1_F	GAACTCAAGAGTGTGGAGAACC
	qPCR_mBeclin1_R	GCGACCCAGTCTGAAATTATTGAT
qPCR for mouse Nischarin	qPCR_mNisch_F	GTGAGATCGACGAATCTGTGAAA
	qPCR_mNisch_R	GTTGTATAGGTGCTGCAGGTTATC
qPCR for mouse Pgk1	qPCR_mPgk1_F	AAAGTCAGCCATGTGAGCACT
	qPCR_mPgk1_R	ACTTAGGAGCACAGGAACCAAA
qPCR for mouse Tfrc	qPCR_mTfrc_F	TCGCTTATATTGGGCAGACC
	qPCR_mTfrc_R	ATCCAGCCTCACGAGGAGT
qPCR for mouse Hprt	qPCR_mHprt_F	GAACCAGGTTATGACCTAGATTTGTT
	qPCR_mHprt_R	CAAGTCTTTCAGTCCTGTCCATAAT
qPCR for human Vps15	qPCR_hVPS15_F	CCATAGCATCTGATAATGGTGCTG
	qPCR_hVPS15_R	CCGTCCTCCTTCTGATCTAGAATT
qPCR for human Vps34	qPCR_hVPS34_F	CTGTGCTGGATATTGCGTGATC
	qPCR_hVPS34_R	AAGTCTATGTGGAAGAGTTTGCCT
qPCR for human BECLIN1	qPCR_hBECLIN1_F	AACTCACAGCTCCATTACTTACCA
	qPCR_hBECLIN1_R	CGAGGAGTTTCAATAAATGGCTCC
qPCR for human PGK1	qPCR_hPGK1_F	ATGGATGAGGTGGTGAAAGC
	qPCR_hPGK1_R	CAGTGCTCACATGGCTGACT
qPCR for human TBP	qPCR_hTBP_F	TGCACAGGAGCCAAGAGTGAA
	qPCR_hTBP_R	CACATCACAGCTCCCCACCA
qPCR for human HPRT	qPCR_hHPRT_F	TGACACTGGCAAAACAATGCA
	qPCR_hHPRT_R	GGTCCTTTTCACCAGCAAGCT

Supplementary Table 2 - Primers used in this study.
This table shows the sequence of genotyping and qPCR primers used in this study.

S

Supplementary Table 3

protein	SwissProt	Score	#unique peptides	wt1	wt2	wt3	mut1	mut2	mut3	foldChange	p
BECN1	O88597	1286.89	1	0.986	0.993	0.962	0.558	0.537	0.585	0.571	3.3934E-07
VPS15	Q8VD65	1954	5	0.986	0.964	0.946	0.549	0.560	0.609	0.593	1.4673E-06
GSTT2	Q61133	299.12	1	0.986	0.999	0.950	1.242	1.210	1.168	1.233	0.000118637
FUT11	Q8BHC9	230.24	1	0.986	0.929	0.922	1.300	1.174	1.187	1.289	0.000240427
HMGA2	P52927	5114.03	5	0.986	1.041	1.042	0.861	0.848	0.873	0.841	0.000249965
S61A1	P61620	2011.46	1	0.986	0.941	1.008	1.174	1.205	1.273	1.244	0.000251194
KLH23	Q6GQU2	172.37	1	0.986	0.987	1.037	1.195	1.168	1.250	1.200	0.000371608
ACD11	Q80XL6	422.01	1	0.986	0.939	0.986	0.833	0.800	0.762	0.822	0.000427916
CACO1	Q8CGU1	2901.2	6	0.986	0.968	0.985	1.204	1.200	1.113	1.196	0.000435137
DEAF1	Q9Z1T5	264.31	1	0.986	1.331	1.228	0.709	0.706	0.762	0.618	0.000453323
FGD2	Q8BY35	175.2	1	0.986	0.865	0.818	2.310	1.447	1.968	2.112	0.000459361
CA2D2	Q6PHS9	3762.55	10	0.986	0.980	1.002	1.106	1.131	1.145	1.140	0.000531073
S38A3	Q9DCP2	451.72	1	0.986	0.878	0.985	0.671	0.682	0.767	0.744	0.000581556
HBE	P02104	12683.33	6	0.986	1.177	1.186	1.625	1.519	1.504	1.391	0.000604178
UBP25	P57080	2351.34	6	0.986	0.978	0.983	1.139	1.129	1.090	1.140	0.000617986
HYES	P34914	323.11	1	0.986	0.956	1.014	1.124	1.208	1.177	1.187	0.000618904
NISCH	Q80TM9	7090.99	12	0.986	0.986	0.936	1.105	1.124	1.112	1.150	0.00068825
DUS19	Q8K4T5	352.21	1	0.986	1.021	0.968	1.255	1.132	1.225	1.213	0.000754102
UBL5	Q9EPV8	1615.09	3	0.986	0.996	0.981	0.851	0.833	0.889	0.868	0.000756576
FA32A	Q9CR80	1082.72	1	0.986	1.052	1.039	0.896	0.893	0.875	0.866	0.000823335
FBX25	Q9D2Y6	218.45	1	0.986	0.921	0.939	1.379	1.145	1.426	1.382	0.0010675
NOE1	O88998	728.62	3	0.986	1.001	1.026	1.128	1.122	1.127	1.121	0.001087626
PTGDS	O09114	5797.11	2	0.986	1.005	1.052	1.149	1.237	1.270	1.201	0.00112523
S17A5	Q8BN82	555.32	1	0.986	1.000	1.054	1.143	1.239	1.210	1.181	0.001172827
H31	P68433	20494.73	1	0.986	1.157	1.033	0.843	0.817	0.857	0.794	0.001208919
ALG9	Q8VDI9	903.97	2	0.986	0.975	1.021	0.892	0.816	0.835	0.853	0.001320928
AIF1	O70200	209.11	1	0.986	0.905	0.936	0.806	0.828	0.789	0.857	0.001335959
TIM8A	Q9WVA2	1904.83	3	0.986	0.991	0.988	1.224	1.100	1.159	1.174	0.001396623
FGFR3	Q61851	530.15	1	0.986	1.015	1.003	0.904	0.856	0.897	0.884	0.001515826
HMHA1	Q3TBD2	302.02	1	0.986	1.183	1.181	0.860	0.856	0.852	0.769	0.001530782
RPC4	Q91WD1	1968.81	3	0.986	1.017	0.977	0.856	0.891	0.893	0.885	0.001545601
WDR4	Q9EP82	678.48	2	0.986	0.854	0.926	1.137	1.122	1.101	1.217	0.001589759
ZMAT2	Q9CPW7	3410.5	5	0.986	1.032	1.026	0.853	0.919	0.854	0.862	0.001654794
MDM4	O35618	472	2	0.986	0.962	0.995	0.884	0.886	0.884	0.902	0.001660152
NALP3	Q8R4B8	244.14	1	0.986	1.029	0.995	1.273	1.434	1.178	1.286	0.001673154
U119B	Q8C4B4	2767.09	2	0.986	1.034	1.033	0.923	0.885	0.890	0.884	0.001735828
NLGN4	B0F2B4	1650.03	4	0.986	1.023	1.025	0.869	0.902	0.919	0.886	0.002059349
CE112	Q5PR68	382.53	2	0.986	0.999	0.997	0.860	0.917	0.857	0.883	0.002121358
UXS1	Q91XL3	187.63	1	0.986	0.977	0.935	1.095	1.063	1.117	1.131	0.002130399
ABCA3	Q8R420	1455.38	3	0.986	0.938	0.945	1.060	1.067	1.072	1.115	0.002134195
TRUB2	Q91WG3	179.9	1	0.986	0.793	0.963	1.275	1.287	1.152	1.359	0.002156279
LPPR2	Q8VCY8	765.83	2	0.986	0.963	0.925	1.098	1.102	1.218	1.188	0.002166916
DVL2	Q60838	3819.85	2	0.986	0.977	0.938	1.059	1.124	1.112	1.136	0.002214263
DDX24	Q9ESV0	1479	3	0.986	0.959	0.980	0.855	0.897	0.836	0.884	0.002234571
HMGB1	P63158	66079.84	17	0.986	0.995	0.939	0.859	0.863	0.880	0.891	0.002304028
FA73B	Q8BK03	212.11	1	0.986	1.024	0.957	1.126	1.101	1.179	1.148	0.002347184
VPS34	Q6PF93	1017.94	3	0.986	0.882	0.913	0.754	0.774	0.813	0.842	0.002404519
WWP2	Q9DBH0	1005.03	3	0.986	1.108	1.067	0.921	0.817	0.823	0.810	0.002411635
TTI1	Q91V83	382.64	1	0.986	0.949	0.883	0.745	0.827	0.753	0.825	0.0024288
KAP1	P12849	7888.64	5	0.986	0.999	0.904	1.093	1.230	1.177	1.211	0.002556
DGAT1	Q9Z2A7	766.57	1	0.986	0.976	1.058	1.173	1.197	1.122	1.157	0.002576533

GSTA4	P24472	2002.43	5	0.986	1.139	1.281	1.509	1.619	1.479	1.359	0.002585764
FMNL3	Q6ZPF4	2194.73	1	0.986	1.169	1.209	0.764	0.842	0.892	0.744	0.002626488
SCOC	Q78YZ6	1092.94	1	0.986	1.009	0.942	0.824	0.857	0.884	0.873	0.002632433
NPTXR	Q99J85	1845.64	4	0.986	0.986	0.994	1.069	1.142	1.166	1.138	0.002634714
PTN	P63089	7793.65	5	0.986	1.051	1.001	0.861	0.920	0.843	0.864	0.002687739
IKKA	Q60680	543.19	2	0.986	0.942	0.944	1.100	1.084	1.044	1.124	0.002713908
RL37A	P61514	3687.54	4	0.986	1.024	0.986	0.882	0.887	0.919	0.897	0.002732407
KCIP2	Q9JJ69	190.97	1	0.986	0.974	0.948	1.462	1.212	1.159	1.312	0.002907993
F206A	Q80ZQ9	1296.84	2	0.986	1.037	0.955	1.360	1.253	1.130	1.254	0.002921831
TAP1	P21958	143.13	1	0.986	0.825	1.102	1.558	1.251	1.524	1.491	0.002955765
SLIT2	Q9R1B9	431.95	1	0.986	0.957	0.956	1.145	1.088	1.055	1.134	0.00300542
FRMD5	Q6P5H6	325.8	2	0.986	1.023	0.994	0.824	0.880	0.910	0.870	0.003020419
TMOD3	Q9JHJ0	4678.62	6	0.986	0.952	0.822	0.738	0.748	0.674	0.784	0.003089748
NEDD4	P46935	32389.8	22	0.986	0.986	0.954	1.073	1.071	1.067	1.098	0.003107976
HBAZ	P06467	4039.32	1	0.986	1.149	1.145	1.469	1.391	1.290	1.267	0.003135441
HBBZ	P04444	752.87	2	0.986	1.070	1.019	1.295	1.140	1.299	1.212	0.003144135
KAP0	Q9DBC7	12857.1	10	0.986	0.999	0.937	1.098	1.265	1.148	1.200	0.003202314
SCRN2	Q8VCA8	609.09	2	0.986	1.010	0.991	1.103	1.073	1.125	1.105	0.003231511
TMA7	Q8K003	3320.46	3	0.986	1.046	1.045	0.926	0.906	0.923	0.895	0.003243274
RHG18	Q8K0Q5	595.17	1	0.986	1.145	1.115	0.860	0.929	0.834	0.809	0.003307025
DHDH	Q9DBB8	713.63	2	0.986	1.014	0.964	1.091	1.124	1.207	1.154	0.003318163
MCAT	Q9Z2Z6	1063.34	5	0.986	0.957	0.909	1.075	1.067	1.064	1.125	0.003407092
ODBB	Q6P3A8	1917.24	5	0.986	0.944	0.926	1.069	1.074	1.043	1.116	0.003444786
BSDC1	Q80Y55	1661.97	5	0.986	0.890	0.971	1.089	1.100	1.079	1.149	0.003451689
CPNE7	Q0VE82	2180.5	2	0.986	1.071	0.987	1.198	1.129	1.169	1.149	0.003472295
BBX	Q8VBW5	192.32	1	0.986	0.857	1.109	1.950	1.286	1.658	1.643	0.003526346
PTPRT	Q99M80	176.73	1	0.986	0.928	0.985	0.843	0.821	0.883	0.878	0.003570132
TAB1	Q8CF89	1579.06	5	0.986	0.971	0.981	1.058	1.066	1.099	1.097	0.003611295
CCDB1	Q3TVC7	258.26	1	0.986	0.995	1.014	0.908	0.851	0.912	0.891	0.003648641
MELK	Q61846	226.54	1	0.986	0.963	0.898	1.103	1.054	1.097	1.144	0.003785073
TXD15	Q6P6J9	941.14	1	0.986	1.018	0.962	1.169	1.084	1.235	1.174	0.003914971
KAT6A	Q8BZ21	1047.76	1	0.986	0.993	1.015	0.899	0.929	0.880	0.904	0.003950467
RTF2	Q99K95	3002	5	0.986	0.962	1.028	0.878	0.841	0.906	0.882	0.004113332
CCD12	Q8R344	5148.65	7	0.986	1.010	1.015	0.920	0.906	0.930	0.915	0.004156256
PAPS1	Q60967	13994.64	13	0.986	0.993	0.992	0.892	0.909	0.924	0.917	0.004292072
PPGB	P16675	2257.02	3	0.986	0.930	0.963	0.822	0.863	0.878	0.890	0.004333183
SUMO3	Q9Z172	9674.1	2	0.986	1.048	0.984	0.847	0.905	0.905	0.880	0.004348159
PRUN2	Q52KR3	830.25	1	0.986	1.025	1.015	0.860	0.865	0.939	0.880	0.004378984
SYF2	Q9D198	215.49	1	0.986	1.066	1.048	0.859	0.835	0.942	0.850	0.004457329
KCNB1	Q03717	151.64	1	0.986	1.086	1.118	0.924	0.915	0.851	0.844	0.00449302
CA050	Q5EBG8	452.8	1	0.986	0.920	0.851	1.110	1.108	1.049	1.186	0.00454157
SUMO2	P61957	11690.68	2	0.986	1.009	0.973	0.894	0.900	0.919	0.914	0.004589929
SH3Y1	O08641	565.93	2	0.986	1.026	0.999	0.866	0.842	0.933	0.876	0.004648502
FA98A	Q3TJZ6	8724.36	5	0.986	1.019	0.975	0.910	0.897	0.913	0.913	0.004662836
S10AD	P97352	364.69	1	0.986	0.917	0.944	1.057	1.040	1.091	1.120	0.004720089
BCLF1	Q8K019	25175.58	21	0.986	1.022	1.014	0.929	0.929	0.908	0.915	0.00477235
SOS2	Q02384	934.12	3	0.986	0.955	0.949	1.103	1.190	1.052	1.156	0.004785798
DCNL4	Q8CCA0	402.41	1	0.986	1.007	1.074	0.876	0.929	0.898	0.882	0.004831393
RIMS4	P60191	370.45	1	0.986	1.146	1.019	1.349	1.201	1.289	1.220	0.00484237
PCD19	Q80TF3	1307.73	4	0.986	1.009	0.954	0.874	0.885	0.908	0.905	0.004852362
EPHB3	P54754	1139.64	1	0.986	0.864	0.823	1.539	1.123	1.204	1.436	0.004890512
MAX	P28574	2184.81	1	0.986	1.033	1.046	0.904	0.944	0.910	0.900	0.004952377
MTX1	P47802	2069.4	5	0.986	0.980	0.980	1.114	1.052	1.070	1.098	0.00515636
RCBT2	Q99LJ7	757.12	2	0.986	0.944	0.947	0.823	0.839	0.894	0.888	0.005212861
PUS3	Q9JI38	349.64	1	0.986	0.985	1.006	0.908	0.929	0.895	0.917	0.005256026
HDAC2	P70288	10005.79	10	0.986	1.036	1.002	0.921	0.930	0.888	0.905	0.005285287
CH059	Q0VG62	399.66	1	0.986	0.955	0.991	0.891	0.898	0.903	0.918	0.005298657

B4GN4	Q766D5	809.54	2	0.986	1.008	1.113	1.321	1.175	1.216	1.195	0.005407402
TOLIP	Q9QZ06	2693.78	5	0.986	0.914	0.960	1.164	1.039	1.111	1.158	0.005424018
CATF	Q9R013	374.52	1	0.986	0.879	1.030	1.234	1.137	1.127	1.210	0.005471734
PER3	O70361	535.16	1	0.986	0.985	0.975	0.889	0.891	0.925	0.918	0.005798466
ZNT9	Q5IRJ6	159.75	1	0.986	0.903	0.945	1.056	1.082	1.039	1.121	0.00583196
NFYB	P63139	221.51	1	0.986	1.069	1.040	0.916	0.944	0.881	0.886	0.005977086
DPOD2	O35654	1359.76	2	0.986	1.103	1.010	0.926	0.894	0.890	0.875	0.006137047
ZN513	Q6PD29	651.12	1	0.986	0.979	0.992	1.106	1.071	1.210	1.144	0.006217392
FBLN1	Q08879	274.28	1	0.986	0.892	0.982	1.141	1.068	1.078	1.150	0.006227481
SAP18	O55128	9106.75	8	0.986	1.012	1.017	0.912	0.944	0.908	0.916	0.006422563
KEAP1	Q9Z2X8	246.9	1	0.986	1.062	1.015	0.938	0.845	0.897	0.874	0.00649818
CSRN2	Q8BGQ2	259.58	1	0.986	0.826	NA	1.276	2.004	1.570	1.761	0.006520897
NUDT4	Q8R2U6	1617.68	1	0.986	0.931	0.920	1.311	1.043	1.301	1.282	0.006528555
VMA21	Q78T54	539.51	1	0.986	0.901	0.928	1.109	1.028	1.060	1.136	0.006531623
TRI37	Q6PCX9	368.92	1	0.986	1.048	1.024	0.851	0.899	0.943	0.880	0.006541929
ULA1	Q8VBW6	8004.63	9	0.986	1.029	1.024	0.906	0.944	0.926	0.913	0.00664933
PR38B	Q80SY5	1319.01	3	0.986	0.983	0.972	0.896	0.894	0.924	0.923	0.006724779
RIT2	P70425	217.68	1	0.986	1.058	1.082	1.161	1.159	1.243	1.140	0.00673558
PRP17	Q9DC48	4714.16	9	0.986	1.019	0.993	0.890	0.916	0.935	0.914	0.006756534
RIN3	P59729	165.2	1	0.986	1.201	1.356	0.836	0.868	0.908	0.743	0.006892993
TIMP2	P25785	220.7	1	0.986	0.890	0.855	1.645	1.100	1.298	1.462	0.006957851
SIR4	Q8R216	439.38	1	0.986	0.956	0.808	1.273	1.108	1.114	1.273	0.006986822
KIRR3	Q8BR86	374.1	1	0.986	1.072	1.025	0.882	0.952	0.873	0.878	0.007164194
MA2A1	P27046	223.55	1	0.986	0.956	0.928	1.048	1.047	1.041	1.093	0.00717135
JAM3	Q9D8B7	136.64	1	0.986	0.989	1.081	1.283	1.248	1.111	1.191	0.007191395
RUND1	Q0VDN7	180.15	1	0.986	1.181	1.050	0.881	0.885	0.920	0.837	0.007202325
CASP8	O89110	212.69	1	0.986	0.983	0.909	1.169	1.041	1.127	1.159	0.007214293
TRI11	Q99PQ2	376.27	2	0.986	0.834	0.796	1.700	1.087	1.315	1.549	0.007226783
PPR3E	Q8BRJ4	656.17	2	0.986	0.959	1.026	1.073	1.174	1.107	1.128	0.007256025
GET4	Q9D1H7	3513.97	3	0.986	0.919	0.964	1.096	1.025	1.094	1.121	0.007428292
AOFB	Q8BW75	749.15	2	0.986	0.963	0.877	1.090	1.116	1.043	1.151	0.007434731
TEN1L	Q9D7K2	733.28	2	0.986	0.923	0.880	1.275	1.083	1.073	1.227	0.007448958
FOXJ2	Q9ES18	550.17	2	0.986	0.991	0.994	0.911	0.902	0.935	0.925	0.007452682
GNA11	P21278	10893.78	3	0.986	0.986	0.950	0.892	0.880	0.911	0.919	0.007494772
IPP2	Q9DCL8	2740.64	3	0.986	1.021	1.007	0.906	0.930	0.939	0.920	0.007499048
MFAP1	Q9CQU1	9516.45	13	0.986	1.015	1.042	0.936	0.909	0.937	0.914	0.00754616
HEAT6	Q6P1G0	1700.45	4	0.986	0.955	0.981	0.873	0.919	0.876	0.913	0.007562459
THOC2	B1AZI6	12860.88	25	0.986	1.032	1.038	0.931	0.919	0.946	0.915	0.007587778
MARH9	Q3TZ87	160.63	1	0.986	0.900	0.885	0.762	0.842	0.738	0.845	0.007604567
TM165	P52875	5571.79	4	0.986	1.030	0.994	1.092	1.102	1.077	1.087	0.007651741
NR2CA	Q3TV70	177.93	1	0.986	1.017	0.984	1.595	1.188	1.226	1.330	0.007657784
ZN667	Q2TL60	242.73	1	0.986	1.027	1.071	0.882	0.920	0.945	0.891	0.007680553
CENPH	Q9QYM8	463.64	1	0.986	1.018	1.083	0.939	0.762	0.766	0.796	0.00770541
ZN609	Q8BZ47	8005.25	14	0.986	1.073	1.044	0.949	0.918	0.923	0.900	0.00772166
NPM3	Q9CPP0	630.36	1	0.986	0.994	0.976	0.913	0.927	0.900	0.927	0.007847129
PEG10	Q7TN75	733.73	2	0.986	0.991	0.966	1.038	1.080	1.104	1.095	0.007853778
LIPT	Q8VCM4	522.85	1	0.986	0.973	0.911	1.045	1.071	1.062	1.108	0.007857541
HS2ST	Q8R3H7	3684.98	6	0.986	1.003	0.999	1.050	1.107	1.105	1.091	0.008145927
RHOA	Q9QUI0	14974.49	7	0.986	1.028	0.994	0.900	0.932	0.930	0.918	0.008150033
AF9	A2AM29	1514.32	5	0.986	1.052	0.975	0.923	0.893	0.905	0.903	0.008208768
CEBPZ	P53569	2465.05	6	0.986	1.013	0.976	0.898	0.872	0.934	0.909	0.008282378
DFFA	O54786	516.64	2	0.986	0.949	0.974	1.055	1.034	1.061	1.083	0.008407685
F110B	Q8C739	2980.25	6	0.986	1.066	1.074	0.952	0.934	0.901	0.892	0.008449356
SYNPO	Q8CC35	1060.68	1	0.986	0.927	0.921	1.061	1.050	1.019	1.105	0.00852343
NOP16	Q9CPT5	1465.47	2	0.986	1.057	1.036	0.893	0.958	0.909	0.896	0.008553306
ARGL1	Q3UL36	7844.11	7	0.986	1.012	0.992	0.924	0.905	0.937	0.925	0.008558836
TOM22	Q9CPQ3	14276.96	4	0.986	0.991	0.981	1.063	1.105	1.047	1.087	0.008622671

SCC4	Q9D2X5	701.77	1	0.986	0.934	0.926	1.107	1.018	1.061	1.119	0.008669547
SEM5B	Q60519	345.62	2	0.986	0.980	1.044	1.090	1.116	1.093	1.096	0.008749864
RELL2	Q8BRJ3	1280.41	2	0.986	1.053	0.872	1.448	1.146	1.211	1.304	0.008753869
HDAC1	O09106	4342.17	5	0.986	1.039	0.996	0.879	0.945	0.906	0.903	0.00880836
KT3K	Q8K274	2192.72	4	0.986	1.008	0.986	0.902	0.940	0.909	0.923	0.008867239
RBCC1	Q9ESK9	2803.88	9	0.986	0.981	1.000	1.045	1.083	1.078	1.080	0.008905976
SL9A7	Q8BLV3	1209.3	2	0.986	1.101	1.048	1.405	1.371	1.140	1.245	0.008934459
PGS1	P28653	253.4	1	0.986	0.992	0.972	1.132	1.036	1.102	1.108	0.009045573
NECA2	Q91ZP9	2433.64	5	0.986	0.976	0.947	1.025	1.119	1.092	1.112	0.009195866
FRMD3	Q8BHD4	176.79	1	0.986	1.032	1.167	0.908	0.869	0.920	0.848	0.009264996
MBB1A	Q7TPV4	21615.62	29	0.986	1.023	1.028	0.927	0.946	0.934	0.924	0.009300332
NOSIP	Q9D6T0	3729.84	4	0.986	1.027	1.065	0.944	0.937	0.912	0.908	0.009314906
CQ059	Q9D6W8	534.5	1	0.986	0.903	0.910	1.050	1.013	1.071	1.120	0.009513696
LSM7	Q9CQQ8	1007.64	2	0.986	1.006	0.985	0.886	0.942	0.903	0.917	0.009555478
F208B	Q5DTT3	381.4	2	0.986	1.010	1.015	0.836	0.927	0.919	0.889	0.009574669
DEN2A	Q8C4S8	140.09	1	0.986	0.961	1.215	0.828	0.871	0.744	0.775	0.009653602
CENPE	Q6RT24	579.67	2	0.986	1.002	0.991	0.826	0.923	0.903	0.890	0.00968411
YTHD2	Q91YT7	10084.49	8	0.986	1.049	1.064	0.905	0.962	0.865	0.881	0.009750006
CRLF1	Q9JM58	324.45	1	0.986	1.009	0.886	0.851	0.822	0.845	0.875	0.00983891
BRX1	Q9DCA5	1663.31	3	0.986	1.072	1.065	0.909	0.955	0.938	0.898	0.009918052
CLIP4	Q8CI96	1404.65	1	0.986	0.954	1.004	1.049	1.160	1.237	1.168	0.009970917
CWC27	Q3TKY6	4255.01	5	0.986	1.005	1.011	0.944	0.895	0.926	0.921	0.009992167

Supplementary Table 3 - Proteins dysregulated in the *Mbe/Mbe* P0 hippocampus.
This table shows those proteins dysregulated in the developing P0 *Marble* hippocampus. The levels for three wild-type and three *Mbe/Mbe* animals are shown, normalised to wild-type 1. We applied a applied a threshold of P<0.01, resulting in the identification of 91 proteins that were more abundant, and 96 that were less abundant in the *Mbe/Mbe* hippocampus. Proteins are ranked according to their P value. Statistical analysis employed limma, which adopts a modified t-test that incorporates a Bayesian approach[1]. Adjustments were not made for mulitple comparisons.

1 Schwammle, V., Leon, I. R. & Jensen, O. N. Assessment and improvement of statistical tools for comparative proteomics analysis of sparse data sets with few experimental replicates. *Journal of proteome research* **12**, 3874-3883, doi:10.1021/pr400045u (2013).