## DisGeNET Top pathways by non-permulation

Geneset	stat	num.genes	pval	p.adj	gene.vals
Schizophrenia	-0.05642985	1625	1.744e-13	1.711e-09	NAV1:2 MMP16:4 NDST3:19 CSMD1:23 NOS1AP:25 HERC2:34
Autism Spectrum Disorders	-0.08636153	483	1.116e-10	4.921e-07	MMP16:4 CSMD1:23 RYR2:32 HERC2:34 LRRN3:41 EHMT1:44
Autistic Disorder	-0.07640121	615	1.505e-10	4.921e-07	ATF6:26 RYR2:32 DOCK4:35 EHMT1:44 CNTN3:51 CHL1:57
Epilepsy, Temporal Lobe	-0.11544030	164	3.612e-07	7.821e-04	KCNQ3:69 GRM2:88 GABRB3:124 PAG1:141 SLC2A1:290 GRIK1:297
Alzheimer's Disease	-0.03842108	1666	3.986e-07	7.821e-04	BLMH:18 CSMD1:23 RYR2:32 F13B:39 EHMT1:44 SORL1:47
Alcoholic Intoxication, Chronic	-0.07554291	376	5.742e-07	9.390e-04	ADCY1:53 GRM2:88 CNTN4:91 HTR1B:114 GABRR1:123 GABRB3:124
Channelopathies	-0.20441645	48	9.747e-07	1.366e-03	SCN9A:5 RYR2:32 ANK2:42 CACNA1S:100 CNGB3:159 SHANK3:171
Generalized seizures	-0.12186189	120	4.172e-06	4.539e-03	HTR1B:114 GABRB3:124 SYNJ1:179 CHRM1:287 SLC2A1:290 GRIK1:297
Mood Disorders	-0.07745801	303	3.925e-06	4.539e-03	ADCY1:53 CHL1:57 VIPR2:58 GRM2:88 HTR1B:114 TAC1:150
nervous system disorder	-0.06868849	382	4.626e-06	4.539e-03	EHMT1:44 SETX:190 SHANK2:201 SLC2A1:290 GRIK1:297 PON1:314
Diabetes Mellitus, Non-Insulin-Dependent	-0.03786013	1350	5.123e-06	4.569e-03	NOS1AP:25 ATF6:26 RYR2:32 PCNX2:40 ANK2:42 EHMT1:44
Mental Depression	-0.05859671	509	7.183e-06	5.873e-03	NOS1AP:25 ADCY1:53 CHL1:57 VIPR2:58 HTR1B:114 GABRB3:124
Neuralgia	-0.14089322	83	9.335e-06	7.045e-03	SCN9A:5 GRM2:88 TAC1:150 TRPM8:167 DRD2:333 TACR1:365
Aura	-0.16446877	59	1.265e-05	8.275e-03	GABRB3:124 CHRM1:287 SCN2A:306 HCN1:405 TSC1:478 SLC12A5:555
Awakening Epilepsy	-0.16446877	59	1.265e-05	8.275e-03	GABRB3:124 CHRM1:287 SCN2A:306 HCN1:405 TSC1:478 SLC12A5:555
Bipolar Disorder	-0.04804998	724	1.354e-05	8.305e-03	DPY19L3:10 NDST3:19 CSMD1:23 NOS1AP:25 SORL1:47 ADCY1:53
Seizures, Focal	-0.11275480	123	1.625e-05	8.390e-03	SCN9A:5 KCNQ3:69 HTR1B:114 CHRM1:287 SLC2A1:290 GRIK1:297
HIV Infections	-0.05060780	639	1.558e-05	8.390e-03	VIPR1:62 IL16:103 TMEM132D:126 GEM:134 CYLD:137 TAC1:150
Mental disorders	-0.07524544	282	1.498e-05	8.390e-03	CSMD1:23 NOS1AP:25 MYT1:86 HTR1B:114 PLPPR4:128 SHANK3:171
Depressive disorder	-0.04937112	646	2.270e-05	1.113e-02	NOS1AP:25 ADCY1:53 CHL1:57 VIPR2:58 HTR1B:114 WDR11:120
Major Depressive Disorder	-0.05774971	460	2.517e-05	1.176e-02	VIPR2:58 GRM2:88 HTR1B:114 TAC1:150 MCTP2:158 DDC:200
Epilepsy, Cryptogenic	-0.15397051	61	3.242e-05	1.210e-02	GABRB3:124 CHRM1:287 SCN2A:306 HCN1:405 TSC1:478 SLC12A5:555
Increased CSF lactate	0.16456012	53	3.453e-05	1.210e-02	LRPPRC:39 TIMMDC1:438 NDUFA9:570 TMEM126B:644 NDUFAF1:891 GFM1:1036
Mitochondrial Diseases	0.06506242	347	3.451e-05	1.210e-02	LRPPRC:39 ECSIT:52 GFM2:86 MTPAP:121 POLG2:122 COA1:124
Obesity	-0.03166200	1647	3.219e-05	1.210e-02	ATF6:26 HERC2:34 EHMT1:44 SORL1:47 LGR6:68 CNTN4:91
Psychotic Disorders	-0.07299263	276	3.247e-05	1.210e-02	LMOD2:56 GRM2:88 HTR1B:114 DDC:200 GABRG3:240 KIDINS220:281
Tonic Seizures	-0.12221321	98	2.981e-05	1.210e-02	HTR1B:114 CHRM1:287 SLC2A1:290 GRIK1:297 SCN2A:306 DRD2:333
Unipolar Depression	-0.05712210	463	2.908e-05	1.210e-02	CSMD1:23 HTR1B:114 MCTP2:158 DDC:200 SELP:203 EGFR:230
Neuroblastoma	-0.03299064	1453	4.067e-05	1.376e-02	KDM5B:8 HERC2:34 DOCK4:35 URGCP:37 LRRN3:41 ANK2:42
Abnormal behavior	-0.06536157	331	4.782e-05	1.564e-02	CSMD1:23 NOS1AP:25 GRM2:88 HTR1B:114 PLPPR4:128 TAC1:150
Absence Seizures	-0.10966078	115	5.005e-05	1.584e-02	SCN9A:5 EHMT1:44 HTR1B:114 CHRM1:287 SLC2A1:290 GRIK1:297
Complex partial seizures	-0.11173103	110	5.302e-05	1.626e-02	HTR1B:114 CHRM1:287 SLC2A1:290 GRIK1:297 DRD2:333 HCN1:405
Andersen Syndrome	-0.24630530	22	6.377e-05	1.896e-02	RYR2:32 ANK2:42 KCNJ12:195 PON1:314 KCNJ5:546 MTHFR:655
NADH:Q(1) Oxidoreductase deficiency	0.22933561	25	7.242e-05	2.090e-02	TIMMDC1:438 TMEM126B:644 NDUFAF1:891 NDUFAF6:1067 NDUFS3:1122 NDUFB10:1293
Alzheimer's Disease, Focal Onset	-0.13234083	74	8.417e-05	2.204e-02	BLMH:18 SORL1:47 ARC:202 BAX:309 IGF1R:363 BIN1:382
Acute Confusional Senile Dementia	-0.13234083	74	8.417e-05	2.204e-02	BLMH:18 SORL1:47 ARC:202 BAX:309 IGF1R:363 BIN1:382
Asthma	-0.03626775	1061	8.841e-05	2.204e-02	PPP1R12B:7 DENND1B:11 CSMD1:23 ATF6:26 RYR2:32 HERC2:34
Central neuroblastoma	-0.03189942	1414	8.821e-05	2.204e-02	KDM5B:8 HERC2:34 DOCK4:35 URGCP:37 LRRN3:41 ANK2:42
Hypertensive disease	-0.03567892	1108	8.375e-05	2.204e-02	CSMD1:23 MOV10:31 RYR2:32 SORL1:47 SLC22A6:59 CNTN4:91
Tonic – clonic seizures	-0.09410443	146	8.987e-05	2.204e-02	SCN9A:5 KCNQ3:69 HTR1B:114 GABRB3:124 SYNJ1:179 CHRM1:287