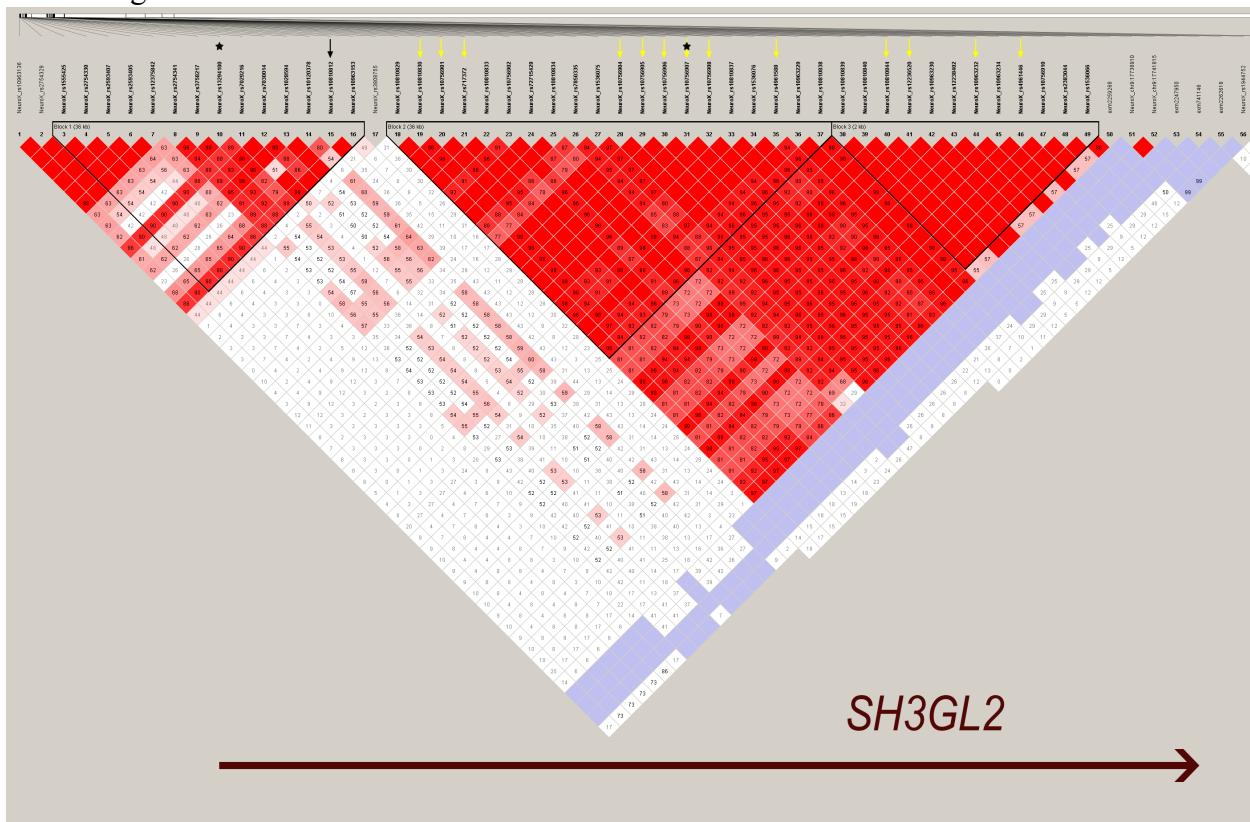


Supplementary Material

Axial Impairment Following Deep Brain Stimulation in Parkinson's Disease: A Surgicogenomic Approach

Supplementary Figure 1. LD-structure of the *SH3GL2* locus. The *SH3GL2* locus (based on the 150 investigated patients with Parkinson's Disease) is tagged by 13 SNPs (yellow arrows) belonging to a single LD-block, while rs10810812 (a black arrow) belongs to a different LD-block. Two SNPs (rs13294100, rs10756907) that were previously reported to be associated with PD at a GWAS-significant level are marked with a star.



Supplementary Table 1. A list of the 113 genes most recently reported to be Parkinson's disease loci.

Gene symbol	Gene Name	CYTOBAND
ASXL3	additional sex combs like 3, transcriptional regulator (ASXL3)	18q11
BAG3	BCL2 associated athanogene 3 (BAG3)	10q26.11
BIN3	bridging integrator 3 (BIN3)	8p21.3
BRIP1	BRCA1 interacting protein C-terminal helicase 1 (BRIP1)	17q23.2
BST1	bone marrow stromal cell antigen 1 (BST1)	4p15
C5orf24	chromosome 5 open reading frame 24 (C5orf24)	5q31.1
CAB39L	calcium binding protein 39 like (CAB39L)	13q14.2
CAMK2D	calcium/calmodulin dependent protein kinase II delta (CAMK2D)	4q26
CASC16	cancer susceptibility candidate 16 (non-protein coding) (CASC16)	16q12.1
CD19	CD19 molecule (CD19)	16p11.2
CHD9	chromodomain helicase DNA binding protein 9 (CHD9)	16q12.2
CHRNBT1	cholinergic receptor nicotinic beta 1 subunit (CHRNBT1)	17p13.1
CLCN3	chloride voltage-gated channel 3 (CLCN3)	4q33
CNTN1	contactin 1 (CNTN1)	12q12
CRHR1	corticotropin releasing hormone receptor 1 (CRHR1)	17q21.31
CRLS1	cardiolipin synthase 1 (CRLS1)	20p12.3
CTSB	cathepsin B (CTSB)	8p22
CUEDC2	CUE domain containing 2 (CUEDC2)	10q24.32
CYLD	CYLD lysine 63 deubiquitinase (CYLD)	16q12.1
DDRGK1	DDRGK domain containing 1 (DDRGK1)	20p13
DLG2	discs large MAGUK scaffold protein 2 (DLG2)	11q14.1
DNAH17	dynein axonemal heavy chain 17 (DNAH17)	17q25.3
DYRK1A	dual specificity tyrosine phosphorylation regulated kinase 1A (DYRK1A)	21q22.13
ELOVL7	ELOVL fatty acid elongase 7 (ELOVL7)	5q12.1
FAM171A2	family with sequence similarity 171 member A2 (FAM171A2)	17q21.31
FAM47E	family with sequence similarity 47 member E (FAM47E)	4q21.1
FAM47E-STBD1	FAM47E-STBD1 readthrough (FAM47E-STBD1)	4q21.1
FAM49B	family with sequence similarity 49 member B (FAM49B)	8q24.21
FBRSL1	fibrosin like 1 (FBRSL1)	12q24.33
FCGR2A	Fc fragment of IgG receptor IIa (FCGR2A)	1q23
FGD4	FYVE, RhoGEF and PH domain containing 4 (FGD4)	12p11.21
FGF20	fibroblast growth factor 20 (FGF20)	8p22
FYN	FYN proto-oncogene, Src family tyrosine kinase (FYN)	6q21
GAK	cyclin G associated kinase (GAK)	4p16
GALC	Galactosylceramidase (GALC)	14q31
GBA	glucosylceramidase beta (GBA)	1q21
GBAP1	glucosylceramidase beta pseudogene 1 (GBAP1)	1q21

GBF1	golgi brefeldin A resistant guanine nucleotide exchange factor 1 (GBF1)	10q24
GCH1	GTP cyclohydrolase 1 (GCH1)	14q22.2
GPNMB	glycoprotein nmb (GPNMB)	7p15
GRN	granulin precursor (GRN)	17q21.32
GS1-124K5.11	RAB guanine nucleotide exchange factor 1 pseudogene (GS1-124K5.11)	7q11.21
GXYLT1	glucoside xylosyltransferase 1(GXYLT1)	12q12
HIP1R	huntingtin interacting protein 1 related (HIP1R)	12q24
HLA-DRB5	major histocompatibility complex, class II, DR beta 5 (HLA-DRB5)	6p21.3
IGSF9B	immunoglobulin superfamily member 9B (IGSF9B)	11q25
INPP5F	inositol polyphosphate-5-phosphatase F (INPP5F)	10q26.11
IP6K2	inositol hexakisphosphate kinase 2 (IP6K2)	3p21.31
ITGA8	integrin subunit alpha 8 (ITGA8)	10p13
ITPKB	inositol-trisphosphate 3-kinase B (ITPKB)	1q42.13
KANSL1	KAT8 regulatory NSL complex subunit 1 (KANSL1)	17q21.31
KCNIP3	potassium voltage-gated channel interacting protein 3 (KCNIP3)	2q21.1
KCNS3	potassium voltage-gated channel modifier subfamily S member 3 (KCNS3)	2p24
KPNA1	karyopherin subunit alpha 1 (KPNA1)	3q21
KRTCAP2	keratinocyte associated protein 2 (KRTCAP2)	1q22
LCORL	ligand dependent nuclear receptor corepressor like (LCORL)	4p15.32
LINC00174	long intergenic non-protein coding RNA 174 (LINC00174)	7q11.21
LINC00693	long intergenic non-protein coding RNA 693 (LINC00693)	3p24.1
LOC100131289	uncharacterized LOC100131289 (LOC100131289)	6p22.1
LRRK2	leucine rich repeat kinase 2 (LRRK2)	12q12
MAP3K14	mitogen-activated protein kinase kinase kinase 14 (MAP3K14)	17q21
MAP4K4	mitogen-activated protein kinase kinase kinase kinase 4 (MAP4K4)	2q11.2
MAPT-AS1	MAPT antisense RNA 1 (MAPT-AS1)	17q21.31
MBNL2	muscleblind like splicing regulator 2 (MBNL2)	13q32.1
MCCC1	methylcrotonoyl-CoA carboxylase 1 (MCCC1)	3q27
MED12L	mediator complex subunit 12 like (MED12L)	3q25.1
MED13	mediator complex subunit 13 (MED13)	17q23.2
MEX3C	mex-3 RNA binding family member C (MEX3C)	18q21.2
MIPOL1	mirror-image polydactyly 1 (MIPOL1)	14q13.3-q21.1
NEK1	NIMA related kinase 1 (NEK1)	4q33
NFATC2IP	nuclear factor of activated T-cells 2 interacting protein (NFATC2IP)	16p11.2
NOD2	nucleotide binding oligomerization domain containing 2 (NOD2)	16q21
NSF	N-ethylmaleimide sensitive factor, vesicle fusing ATPase (NSF)	17q21

NUCKS1	nuclear casein kinase and cyclin dependent kinase substrate 1 (NUCKS1)	1q32.1
PAM	peptidylglycine alpha-amidating monooxygenase (PAM)	5q21.1
PRKN	parkin RBR E3 ubiquitin protein ligase (PARK2)	6q26
PARK7	Parkinsonism associated deglycase (PARK7)	1p36.23
PINK1	PTEN induced putative kinase 1 (PINK1)	1p36
PMVK	phosphomevalonate kinase (PMVK)	1q22
PRSS3	protease, serine 3 (PRSS3)	9p11.2
RAB29	RAB29, member RAS oncogene family (RAB29)	1q32
RETREG3	reticulophagy regulator family member 3	17q21.2
RIMS1	regulating synaptic membrane exocytosis 1 (RIMS1)	6q12-q13
RIT2	Ras like without CAAX 2 (RIT2)	18q12.3
RNF141	ring finger protein 141 (RNF141)	11p15.4
RPS12	ribosomal protein S12 (RPS12)	6q23.2
RPS6KL1	ribosomal protein S6 kinase like 1 (RPS6KL1)	14q24.3
SATB1	SATB homeobox 1 (SATB1)	3p23
SCAF11	SR-related CTD associated factor 11 (SCAF11)	12q12
SCARB2	scavenger receptor class B member 2 (SCARB2)	4q21.1
SEC23IP	SEC23 interacting protein (SEC23IP)	10q26.11-q26.12
SEMA4A	semaphorin 4A (SEMA4A)	1q22
SETD1A	SET domain containing 1A (SETD1A)	16p11.2
SH3GL2	SH3 domain containing GRB2 like 2, endophilin A1 (SH3GL2)	9p22
SIPA1L2	signal induced proliferation associated 1 like 2 (SIPA1L2)	1q42.2
SLC44A4	solute carrier family 44 member 4 (SLC44A4)	6p21.3
SMPD1	sphingomyelin phosphodiesterase 1 (SMPD1)	11p15.4
SNCA	synuclein alpha (SNCA)	4q21
SPPL2B	signal peptide peptidase like 2B (SPPL2B)	19p13.3
SPTSSB	serine palmitoyltransferase small subunit B (SPTSSB)	3q26.1
STK39	serine/threonine kinase 39 (STK39)	2q24.3
SYT17	synaptotagmin 1 7(SYT17)	16p12.3
TMEM163	transmembrane protein 163 (TMEM163)	2q21.3
TMEM175	transmembrane protein 175 (TMEM175)	4p16.3
TRIM40	tripartite motif containing 40 (TRIM40)	6p21.33
TXNDC15	thioredoxin domain containing 15 (TXNDC15)	5q31.1
UBAP2	ubiquitin associated protein 2 (UBAP2)	9p13.3
UBTF	upstream binding transcription factor, RNA polymerase I (UBTF)	17q21.3
VAMP4	vesicle associated membrane protein 4 (VAMP4)	1q24.3
VPS13C	vacuolar protein sorting 13 homolog C (VPS13C)	15q22.2
VPS35	VPS35, retromer complex component (VPS35)	16q12.7
WNT3	Wnt family member 3 (WNT3)	17q21
ZNF608	zinc finger protein 608 (ZNF608)	5q23.2

Supplementary Table 2. Results of the association study between the 2917 polymorphic markers and the four outcome clusters. 590 nominally significant signals were identified. High effect sizes (odds ratios 9-13) are bold-typed.

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ	P	OR
ST LEDD	exm994603	LRRK2	exonic	12	4070778	A	0.059	0.006	G	7.47	0.006	10.8
ST LEDD	exm391692	LCORL	exonic	4	17910840	C	0.051	0.012	T	4.01	0.045	4.6
ST LEDD	exm1230665	CD19	exonic	16	28950051	A	0.093	0.035	G	4.32	0.038	2.8
ST LEDD	exm682875	CTSB	exonic	8	11710174	C	0.195	0.081	T	8.10	0.004	2.7
ST LEDD	NeuroX_rs10756904	SH3GL2	intronic	9	17726844	T	0.373	0.192	G	11.76	0.001	2.5
ST LEDD	NeuroX_rs10756906	SH3GL2	intronic	9	17727015	A	0.373	0.192	G	11.76	0.001	2.5
ST LEDD	NeuroX_rs10756907	SH3GL2	intronic	9	17727065	G	0.373	0.192	A	11.76	0.001	2.5
ST LEDD	NeuroX_rs10756908	SH3GL2	intronic	9	17727349	T	0.373	0.192	C	11.76	0.001	2.5
ST LEDD	NeuroX_rs4961588	SH3GL2	intronic	9	17732555	T	0.373	0.192	C	11.76	0.001	2.5
ST LEDD	NeuroX_rs10756905	SH3GL2	intronic	9	17726888	T	0.373	0.194	C	11.36	0.001	2.5
ST LEDD	NeuroX_rs35220888	TMEM163;ACMSD	intergenic	2	135479582	A	0.212	0.099	G	7.22	0.007	2.5
ST LEDD	NeuroX_rs17321713	TMEM163;ACMSD	intergenic	2	135480363	T	0.212	0.099	C	7.22	0.007	2.5
ST LEDD	NeuroX_rs10810830	SH3GL2	intronic	9	17698565	G	0.407	0.221	A	11.59	0.001	2.4
ST LEDD	NeuroX_rs10756901	SH3GL2	intronic	9	17699508	T	0.398	0.215	C	11.41	0.001	2.4
ST LEDD	NeuroX_rs717372	SH3GL2	intronic	9	17699981	A	0.398	0.215	G	11.41	0.001	2.4
ST LEDD	NeuroX_rs10810844	SH3GL2	intronic	9	17733920	T	0.373	0.198	G	10.93	0.001	2.4
ST LEDD	NeuroX_rs12236520	SH3GL2	intronic	9	17734130	T	0.373	0.198	C	10.93	0.001	2.4
ST LEDD	NeuroX_rs10963232	SH3GL2	intronic	9	17734640	T	0.373	0.198	C	10.93	0.001	2.4
ST LEDD	NeuroX_rs4961446	SH3GL2	intronic	9	17735083	G	0.373	0.198	A	10.93	0.001	2.4
ST LEDD	NeuroX_rs4430991	TMEM163;ACMSD	intergenic	2	135491932	T	0.195	0.093	C	6.24	0.012	2.4
ST LEDD	NeuroX_rs78877892	TMEM163;ACMSD	intergenic	2	135516504	G	0.195	0.093	A	6.24	0.012	2.4
ST LEDD	NeuroX_rs62171443	TMEM163;ACMSD	intergenic	2	135594221	C	0.407	0.227	T	10.80	0.001	2.3
ST LEDD	NeuroX_rs10810829	SH3GL2	intronic	9	17697095	T	0.407	0.227	G	10.80	0.001	2.3
ST LEDD	NeuroX_rs10756902	SH3GL2	intronic	9	17710876	A	0.407	0.227	G	10.80	0.001	2.3
ST LEDD	NeuroX_rs10810837	SH3GL2	intronic	9	17730965	C	0.381	0.209	T	10.29	0.001	2.3
ST LEDD	NeuroX_rs62171444	TMEM163;ACMSD	intergenic	2	135594399	C	0.364	0.198	A	9.98	0.002	2.3
ST LEDD	NeuroX_rs10810838	SH3GL2	intronic	9	17733122	T	0.373	0.204	G	10.13	0.001	2.3
ST LEDD	NeuroX_rs10810833	SH3GL2	intronic	9	17703556	G	0.407	0.229	A	10.39	0.001	2.3
ST LEDD	NeuroX_rs17733977	TMEM163	intronic	2	135470056	A	0.212	0.105	G	6.37	0.012	2.3
ST LEDD	NeuroX_rs5007396	STK39	intronic	2	169095829	T	0.456	0.271	C	10.40	0.001	2.3
ST LEDD	exm1521277	DDRGK1	exonic	20	3171337	T	0.229	0.116	C	6.53	0.011	2.3
ST LEDD	NeuroX_rs1536076	SH3GL2	intronic	9	17731921	G	0.381	0.215	T	9.54	0.002	2.2
ST LEDD	NeuroX_rs10963229	SH3GL2	intronic	9	17733078	A	0.254	0.134	C	6.81	0.009	2.2
ST LEDD	NeuroX_rs62171431	TMEM163;ACMSD	intergenic	2	135563672	T	0.195	0.099	C	5.43	0.020	2.2
ST LEDD	NeuroX_rs27215429	SH3GL2	intronic	9	17712754	G	0.424	0.250	A	9.70	0.002	2.2
ST LEDD	NeuroX_rs62171378	TMEM163	intronic	2	135443955	G	0.203	0.105	A	5.51	0.019	2.2
ST LEDD	NeuroX_rs62171424	TMEM163;ACMSD	intergenic	2	135549113	T	0.203	0.105	C	5.51	0.019	2.2
ST LEDD	NeuroX_rs10810834	SH3GL2	intronic	9	17713235	G	0.424	0.256	A	9.01	0.003	2.1
ST LEDD	NeuroX_rs4953923	TMEM163	intronic	2	135445946	T	0.229	0.122	C	5.77	0.016	2.1
ST LEDD	NeuroX_rs74865979	TMEM163;ACMSD	intergenic	2	135491290	G	0.178	0.093	T	4.54	0.033	2.1
ST LEDD	NeuroX_rs13033373	TMEM163;ACMSD	intergenic	2	135520534	C	0.178	0.093	T	4.54	0.033	2.1
ST LEDD	NeuroX_rs77422475	TMEM163;ACMSD	intergenic	2	135528787	A	0.178	0.093	G	4.54	0.033	2.1
ST LEDD	NeuroX_rs6747565	STK39	intronic	2	169090464	C	0.449	0.279	T	8.92	0.003	2.1
ST LEDD	NeuroX_rs10194006	STK39	intronic	2	169090562	C	0.449	0.279	T	8.92	0.003	2.1
ST LEDD	NeuroX_rs13430810	STK39	intronic	2	169090774	C	0.449	0.279	T	8.92	0.003	2.1
ST LEDD	NeuroX_rs10175790	STK39	intronic	2	169094746	C	0.449	0.279	T	8.92	0.003	2.1
ST LEDD	NeuroX_rs950535	STK39	intronic	2	169095854	T	0.449	0.279	C	8.92	0.003	2.1
ST LEDD	NeuroX_rs7595706	STK39;CERS6	intergenic	2	169156921	A	0.449	0.279	G	8.92	0.003	2.1
ST LEDD	NeuroX_rs2466561	STK39;CERS6	intergenic	2	169157973	C	0.449	0.279	T	8.92	0.003	2.1
ST LEDD	NeuroX_rs756480	STK39;CERS6	intergenic	2	169161223	C	0.449	0.279	T	8.92	0.003	2.1
ST LEDD	exm1330395	MAP3K14	exonic	17	43342141	G	0.331	0.192	C	7.21	0.007	2.1
ST LEDD	NeuroX_rs71417530	TMEM163	intronic	2	135448651	G	0.195	0.105	A	4.70	0.030	2.1
ST LEDD	NeuroX_rs4954162	TMEM163	intronic	2	135438789	A	0.203	0.111	G	4.79	0.029	2.1
ST LEDD	NeuroX_rs62171377	TMEM163	intronic	2	135439752	A	0.203	0.111	G	4.79	0.029	2.1
ST LEDD	NeuroX_rs12622375	STK39;CERS6	intergenic	2	169110621	G	0.492	0.320	A	8.68	0.003	2.1
ST LEDD	NeuroX_rs6747870	TMEM163	intronic	2	135469769	G	0.212	0.116	A	4.88	0.027	2.0
ST LEDD	NeuroX_rs12618884	STK39	intronic	2	168985875	G	0.576	0.401	A	8.61	0.003	2.0
ST LEDD	NeuroX_rs6745983	TMEM163	intronic	2	135430709	G	0.593	0.419	A	8.54	0.003	2.0
ST LEDD	NeuroX_rs11898465	TMEM163	intronic	2	135431449	G	0.593	0.419	T	8.54	0.003	2.0
ST LEDD	NeuroX_rs4954160	TMEM163	intronic	2	135431692	A	0.593	0.419	C	8.54	0.003	2.0
ST LEDD	NeuroX_rs4954168	TMEM163	intronic	2	135465073	T	0.237	0.134	C	5.18	0.023	2.0
ST LEDD	NeuroX_rs6747587	TMEM163	intronic	2	135469514	G	0.237	0.134	A	5.18	0.023	2.0
ST LEDD	NeuroX_rs4953925	TMEM163	intronic	2	135471290	C	0.237	0.134	T	5.18	0.023	2.0
ST LEDD	NeuroX_rs16830945	TMEM163	intronic	2	135471748	C	0.237	0.134	T	5.18	0.023	2.0
ST LEDD	NeuroX_rs13018063	TMEM163	intronic	2	135475808	A	0.237	0.134	G	5.18	0.023	2.0
ST LEDD	NeuroX_rs62171396	TMEM163	upstream	2	135476859	T	0.237	0.134	C	5.18	0.023	2.0
ST LEDD	NeuroX_rs3739034	TMEM163;ACMSD	intergenic	2	135483381	C	0.237	0.134	T	5.18	0.023	2.0
ST LEDD	NeuroX_rs3886741	TMEM163;ACMSD	intergenic	2	135484101	A	0.237	0.134	G	5.18	0.023	2.0
ST LEDD	NeuroX_rs34947476	TMEM163;ACMSD	intergenic	2	135486150	G	0.237	0.134	T	5.18	0.023	2.0
ST LEDD	NeuroX_rs34405766	TMEM163;ACMSD	intergenic	2	135486189	A	0.237	0.134	G	5.18	0.023	2.0
ST LEDD	NeuroX_rs34252323	TMEM163;ACMSD	intergenic	2	135486302	A	0.237	0.134	G	5.18	0.023	2.0
ST LEDD	exm-rs3815081	TRIM40	intronic	6	30114074	C	0.246	0.140	T	5.29	0.021	2.0
ST LEDD	NeuroX_rs12692873	STK39	intronic	2	168961473	C	0.576	0.407	A	8.04	0.005	2.0
ST LEDD	NeuroX_rs13432160	STK39	intronic	2	168970501	C	0.576	0.413	T	7.50	0.006	1.9
ST LEDD	NeuroX_rs16830908	TMEM163	intronic	2	135438471	A	0.212	0.122	G	4.23	0.040	1.9
ST LEDD	NeuroX_rs17165087	GAK	intronic	4	845841	T	0.237	0.140	C	4.55	0.033	1.9
ST LEDD	NeuroX_rs4690340	GAK	intronic	4	848280	A	0.237	0.140	C	4.55	0.033	1.9
ST LEDD	NeuroX_rs12509561	GAK	intronic	4	850701	T	0.237	0.140	C	4.55	0.033	1.9
ST LEDD	NeuroX_rs4690339	GAK	intronic	4	854712	G	0.237	0.140	A	4.55	0.033	1.9
ST LEDD	NeuroX_rs7684266	GAK	intronic	4	856609	C	0.237	0.140	T	4.55	0.033	1.9
ST LEDD	NeuroX_rs4690330	GAK	intronic	4	867242	A	0.237	0.140	G	4.55	0.033	1.9

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ.	P	OR
ST LEDD	NeuroX_rs13007593	STK39	intronic	2	168970163	C	0.568	0.413	G	6.74	0.009	1.9
ST LEDD	NeuroX_rs10810840	SH3GL2	intronic	9	17733213	G	0.432	0.291	T	6.17	0.013	1.9
ST LEDD	NeuroX_rs10963230	SH3GL2	intronic	9	17734284	G	0.432	0.291	A	6.17	0.013	1.9
ST LEDD	NeuroX_rs12238402	SH3GL2	intronic	9	17734385	G	0.432	0.291	A	6.17	0.013	1.9
ST LEDD	NeuroX_rs10963234	SH3GL2	intronic	9	17734788	G	0.432	0.291	T	6.17	0.013	1.9
ST LEDD	NeuroX_rs10756910	SH3GL2	intronic	9	17735483	T	0.432	0.291	C	6.17	0.013	1.9
ST LEDD	NeuroX_rs2383044	SH3GL2	intronic	9	17735707	A	0.432	0.291	G	6.17	0.013	1.9
ST LEDD	NeuroX_rs842362	TMEM163	intronic	2	135341120	A	0.458	0.314	G	6.18	0.013	1.8
ST LEDD	NeuroX_rs859766	TMEM163	intronic	2	135342254	T	0.458	0.314	C	6.18	0.013	1.8
ST LEDD	NeuroX_rs842348	TMEM163	intronic	2	135342391	G	0.458	0.314	T	6.18	0.013	1.8
ST LEDD	NeuroX_rs2724171	STK39;CERS6	intergenic	2	169154462	C	0.458	0.314	A	6.18	0.013	1.8
ST LEDD	NeuroX_rs1461943	KCNS3;RDH14	intergenic	2	18116319	A	0.229	0.140	G	3.85	0.050	1.8
ST LEDD	exam1361186	DNAH17	exonic	17	76522785	T	0.229	0.140	C	3.85	0.050	1.8
ST LEDD	NeuroX_rs56307842	GAK	intronic	4	854232	C	0.237	0.145	T	3.96	0.047	1.8
ST LEDD	NeuroX_rs2306244	GAK	intronic	4	862502	G	0.237	0.145	A	3.96	0.047	1.8
ST LEDD	NeuroX_rs73207791	GAK	intronic	4	865941	G	0.237	0.145	A	3.96	0.047	1.8
ST LEDD	NeuroX_rs58429160	GAK	intronic	4	875266	A	0.237	0.145	G	3.96	0.047	1.8
ST LEDD	NeuroX_rs4872527	BIN3	intronic	8	22496048	A	0.441	0.302	G	5.82	0.016	1.8
ST LEDD	NeuroX_rs10810839	SH3GL2	intronic	9	17733190	A	0.432	0.297	G	5.65	0.017	1.8
ST LEDD	NeuroX_rs3595285	BIN3	intronic	8	22491622	G	0.441	0.308	T	5.32	0.021	1.8
ST LEDD	NeuroX_rs1809452	BIN3	intronic	8	22491397	A	0.432	0.302	G	5.16	0.023	1.8
ST LEDD	NeuroX_rs859767	TMEM163	intronic	2	135341200	G	0.475	0.343	A	5.06	0.024	1.7
ST LEDD	exam2270386	TRAF3IP2;FYN	intergenic	6	111935682	G	0.475	0.343	T	5.06	0.024	1.7
ST LEDD	NeuroX_rs6430538	TMEM163;ACMSD	intergenic	2	135539967	T	0.576	0.442	C	5.06	0.025	1.7
ST LEDD	NeuroX_rs4953936	TMEM163;ACMSD	intergenic	2	135581512	T	0.576	0.442	C	5.06	0.025	1.7
ST LEDD	NeuroX_rs11776549	BIN3	intronic	8	22493124	T	0.432	0.308	C	4.68	0.030	1.7
ST LEDD	NeuroX_rs4242434	BIN3	intronic	8	22501830	T	0.432	0.308	G	4.68	0.030	1.7
ST LEDD	NeuroX_rs4931016	FGD4	intronic	12	32690746	C	0.585	0.454	T	4.82	0.028	1.7
ST LEDD	exam2266595	FFG20;MICU3	intergenic	8	16881740	G	0.559	0.436	A	4.26	0.039	1.6
ST LEDD	NeuroX_rs7850335	SH3GL2	intronic	9	17720175	T	0.492	0.372	C	4.10	0.043	1.6
ST LEDD	NeuroX_rs11614702	LOC101928416;FBRS1L	intergenic	12	133058157	G	0.568	0.448	A	4.04	0.044	1.6
ST LEDD	NeuroX_rs2724176	STK39;CERS6	intergenic	2	169142042	G	0.398	0.517	T	3.99	0.046	0.6
ST LEDD	NeuroX_rs12373660	STK39;CERS6	intergenic	2	169148282	G	0.398	0.517	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs2090462	STK39;CERS6	intergenic	2	169149135	A	0.398	0.517	G	3.99	0.046	0.6
ST LEDD	NeuroX_rs974314	STK39;CERS6	intergenic	2	169149965	G	0.398	0.517	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs7563871	STK39;CERS6	intergenic	2	169150589	A	0.398	0.517	G	3.99	0.046	0.6
ST LEDD	NeuroX_rs2203704	STK39;CERS6	intergenic	2	169150945	C	0.398	0.517	T	3.99	0.046	0.6
ST LEDD	NeuroX_rs971899	STK39;CERS6	intergenic	2	169152291	G	0.398	0.517	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs1517336	STK39;CERS6	intergenic	2	169152936	G	0.398	0.517	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs10207387	STK39;CERS6	intergenic	2	169154232	A	0.398	0.517	C	3.99	0.046	0.6
ST LEDD	NeuroX_rs1864774	DLG2	intronic	11	83199276	G	0.348	0.465	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs7948931	DLG2	intronic	11	83200563	C	0.348	0.465	T	3.99	0.046	0.6
ST LEDD	NeuroX_rs1367982	DLG2	intronic	11	83202270	G	0.348	0.465	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs6592116	DLG2	intronic	11	83203488	C	0.348	0.465	T	3.99	0.046	0.6
ST LEDD	NeuroX_rs7131385	DLG2	intronic	11	83204471	G	0.348	0.465	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs7927629	DLG2	intronic	11	83205247	C	0.348	0.465	T	3.99	0.046	0.6
ST LEDD	NeuroX_rs10898127	DLG2	intronic	11	83208125	G	0.348	0.465	T	3.99	0.046	0.6
ST LEDD	NeuroX_rs603174	DLG2	intronic	11	83274615	A	0.348	0.465	G	3.99	0.046	0.6
ST LEDD	NeuroX_rs641838	DLG2	intronic	11	83285873	C	0.348	0.465	A	3.99	0.046	0.6
ST LEDD	NeuroX_rs2295545	LZTS3;DDRKG1	intergenic	20	3164686	C	0.356	0.477	T	4.17	0.041	0.6
ST LEDD	NeuroX_rs4815754	DDRKG1	downstream	20	3170172	C	0.356	0.477	T	4.17	0.041	0.6
ST LEDD	NeuroX_rs2404581	LRRK2	intronic	12	40639901	C	0.319	0.436	T	4.00	0.046	0.6
ST LEDD	NeuroX_rs958246	DLG2	intronic	11	83185861	T	0.339	0.459	G	4.19	0.041	0.6
ST LEDD	NeuroX_rs1469609	DLG2	intronic	11	83193765	G	0.339	0.459	T	4.19	0.041	0.6
ST LEDD	NeuroX_rs11233649	DLG2	intronic	11	83221390	A	0.339	0.459	C	4.19	0.041	0.6
ST LEDD	NeuroX_rs4341564	DLG2	intronic	11	83231605	A	0.339	0.459	G	4.19	0.041	0.6
ST LEDD	NeuroX_rs2593405	CNTLN;SH3GL2	intergenic	9	17557130	G	0.322	0.442	A	4.21	0.040	0.6
ST LEDD	NeuroX_rs614398	DLG2	intronic	11	83270670	A	0.348	0.471	G	4.38	0.036	0.6
ST LEDD	NeuroX_rs6592145	DLG2	intronic	11	83536043	C	0.331	0.454	T	4.40	0.036	0.6
ST LEDD	NeuroX_rs694613	DLG2	intronic	11	83312499	A	0.356	0.482	G	4.54	0.033	0.6
ST LEDD	NeuroX_rs668625	DLG2	intronic	11	83310805	C	0.356	0.483	T	4.58	0.032	0.6
ST LEDD	NeuroX_rs611766	DLG2	intronic	11	83313133	C	0.356	0.483	T	4.58	0.032	0.6
ST LEDD	NeuroX_rs553935	DLG2	intronic	11	83313402	G	0.356	0.483	A	4.58	0.032	0.6
ST LEDD	NeuroX_rs598934	DLG2	intronic	11	83313673	C	0.356	0.483	T	4.58	0.032	0.6
ST LEDD	NeuroX_rs558350	DLG2	intronic	11	83313875	G	0.356	0.483	T	4.58	0.032	0.6
ST LEDD	NeuroX_rs582207	DLG2	intronic	11	83315064	C	0.356	0.483	T	4.58	0.032	0.6
ST LEDD	NeuroX_rs633191	DLG2	intronic	11	83318572	C	0.356	0.483	T	4.58	0.032	0.6
ST LEDD	NeuroX_rs3815986	DLG2	intronic	11	83184482	G	0.339	0.465	A	4.59	0.032	0.6
ST LEDD	exam2267199	DLG2	intronic	11	83267970	G	0.348	0.477	A	4.75	0.029	0.6
ST LEDD	NeuroX_rs11233632	DLG2	intronic	11	83190682	C	0.348	0.477	T	4.79	0.029	0.6
ST LEDD	NeuroX_rs575952	DLG2	intronic	11	83263551	G	0.348	0.477	A	4.79	0.029	0.6
ST LEDD	NeuroX_rs2512689	DLG2	intronic	11	83264100	C	0.348	0.477	T	4.79	0.029	0.6
ST LEDD	NeuroX_rs631277	DLG2	intronic	11	83265515	A	0.348	0.477	C	4.79	0.029	0.6
ST LEDD	NeuroX_rs581178	DLG2	intronic	11	83267048	A	0.348	0.477	G	4.79	0.029	0.6
ST LEDD	NeuroX_rs473255	DLG2	intronic	11	83267256	G	0.348	0.477	A	4.79	0.029	0.6
ST LEDD	NeuroX_rs663399	DLG2	intronic	11	83268083	T	0.348	0.477	C	4.79	0.029	0.6
ST LEDD	NeuroX_rs483020	DLG2	intronic	11	83269758	T	0.348	0.477	C	4.79	0.029	0.6
ST LEDD	NeuroX_rs600570	DLG2	intronic	11	83269872	G	0.348	0.477	A	4.79	0.029	0.6
ST LEDD	NeuroX_rs601826	DLG2	intronic	11	83270096	A	0.348	0.477	G	4.79	0.029	0.6
ST LEDD	NeuroX_rs500359	DLG2	intronic	11	83274485	A	0.348	0.477	G	4.79	0.029	0.6
ST LEDD	NeuroX_rs526787	DLG2	intronic	11	83275071	G	0.348	0.477	T	4.79	0.029	0.6
ST LEDD	NeuroX_rs667730	DLG2	intronic	11	83277325	C	0.348	0.477	T	4.79	0.029	0.6
ST LEDD	NeuroX_rs536566	DLG2	intronic	11	83278970	A	0.348	0.477	G	4.79	0.029	0.6
ST LEDD	NeuroX_rs638746	DLG2	intronic	11	83279182	C	0.348	0.477	T	4.79	0.029	0.6
ST LEDD	NeuroX_rs590014	DLG2	intronic	11	83281821	C	0.348	0.477	T	4.79	0.029	0.6
ST LEDD	NeuroX_rs535809	DLG2	intronic	11	83289994	G	0.348	0.477	A	4.79	0.029	0.6
ST LEDD	NeuroX_rs671321	DLG2	intronic	11	83292373	G	0.348	0.477	T	4.79	0.029	0.6

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ.	P	OR
ST LEDD	NeuroX_rs2436152	DLG2	intronic	11	83316269	A	0.348	0.477	G	4.79	0.029	0.6
ST LEDD	NeuroX_rs481573	LZTS3;DDR GK1	intergenic	20	3166671	T	0.348	0.477	C	4.79	0.029	0.6
ST LEDD	NeuroX_rs58046886	LZTS3;DDR GK1	intergenic	20	3168430	G	0.348	0.477	A	4.79	0.029	0.6
ST LEDD	NeuroX_rs1056881	LZTS3;DDR GK1	intergenic	20	3169729	T	0.348	0.477	C	4.79	0.029	0.6
ST LEDD	NeuroX_rs1228630	DLG2	intronic	11	83267560	T	0.345	0.476	C	4.77	0.029	0.6
ST LEDD	NeuroX_rs638692	DLG2	intronic	11	83279208	A	0.348	0.483	G	5.22	0.022	0.6
ST LEDD	NeuroX_rs488600	DLG2	intronic	11	83279836	G	0.348	0.483	A	5.22	0.022	0.6
ST LEDD	NeuroX_rs513020	DLG2	intronic	11	83292394	G	0.348	0.483	T	5.22	0.022	0.6
ST LEDD	NeuroX_rs2508720	DLG2	intronic	11	83293454	C	0.348	0.483	T	5.22	0.022	0.6
ST LEDD	NeuroX_rs44159	DLG2	intronic	11	83293489	C	0.348	0.483	T	5.22	0.022	0.6
ST LEDD	NeuroX_rs656537	DLG2	intronic	11	83309706	T	0.348	0.483	C	5.22	0.022	0.6
ST LEDD	NeuroX_rs4889603	SETD1A	intronic	16	30982225	G	0.356	0.494	A	5.44	0.020	0.6
ST LEDD	NeuroX_rs622934	DLG2	intronic	11	83273525	T	0.339	0.477	C	5.45	0.020	0.6
ST LEDD	NeuroX_rs2436158	DLG2	intronic	11	83282729	C	0.339	0.477	T	5.45	0.020	0.6
ST LEDD	NeuroX_rs489752	DLG2	intronic	11	83294978	T	0.339	0.477	C	5.45	0.020	0.6
ST LEDD	NeuroX_rs491592	DLG2	intronic	11	83295176	C	0.339	0.477	T	5.45	0.020	0.6
ST LEDD	NeuroX_rs11640961	SETD1A	intronic	16	30979818	T	0.353	0.494	C	5.52	0.019	0.6
ST LEDD	NeuroX_rs11199037	TIAL1;BAG3	intergenic	10	121357825	T	0.195	0.302	G	4.21	0.040	0.6
ST LEDD	NeuroX_rs1155312	DLG2	intronic	11	83489426	T	0.356	0.500	C	5.89	0.015	0.6
ST LEDD	NeuroX_rs11727899	CPLX1;GAK	intergenic	4	827585	C	0.254	0.384	T	5.30	0.021	0.5
ST LEDD	NeuroX_rs613828	TMEM163	intronic	2	135298713	G	0.305	0.448	T	5.98	0.014	0.5
ST LEDD	NeuroX_rs614356	TMEM163	intronic	2	135298862	T	0.305	0.448	C	5.98	0.014	0.5
ST LEDD	NeuroX_rs643796	TMEM163	intronic	2	135300858	A	0.305	0.448	G	5.98	0.014	0.5
ST LEDD	NeuroX_rs487404	TMEM163	intronic	2	135300861	A	0.305	0.448	G	5.98	0.014	0.5
ST LEDD	NeuroX_rs9400515	FYN;WISP3	intergenic	6	112250110	C	0.161	0.262	A	4.12	0.042	0.5
ST LEDD	NeuroX_rs10928512	TMEM163	intronic	2	135451302	T	0.390	0.547	G	6.88	0.009	0.5
ST LEDD	NeuroX_rs6739706	TMEM163	intronic	2	135407409	C	0.405	0.563	A	6.69	0.010	0.5
ST LEDD	exm-rs261440	TRIM31-AS1;TRIM40	intergenic	6	30090820	C	0.161	0.267	T	4.56	0.033	0.5
ST LEDD	NeuroX_dbSNP_rs11											
ST LEDD	5110884	TRIM31-AS1;TRIM40	intergenic	6	30095329	C	0.161	0.267	T	4.56	0.033	0.5
ST LEDD	NeuroX_rs10193171	TMEM163	intronic	2	135403199	G	0.398	0.559	A	7.18	0.007	0.5
ST LEDD	NeuroX_rs10171371	TMEM163	intronic	2	135372159	T	0.364	0.524	C	7.09	0.008	0.5
ST LEDD	NeuroX_rs11688414	TMEM163	intronic	2	135420237	A	0.348	0.506	G	7.12	0.008	0.5
ST LEDD	NeuroX_rs10928507	TMEM163	intronic	2	135396631	G	0.398	0.564	A	7.68	0.006	0.5
ST LEDD	NeuroX_rs6705916	TMEM163	intronic	2	135397569	T	0.398	0.564	C	7.68	0.006	0.5
ST LEDD	NeuroX_rs6724774	TMEM163	intronic	2	135407285	T	0.398	0.564	C	7.68	0.006	0.5
ST LEDD	NeuroX_rs6724777	TMEM163	intronic	2	135407292	T	0.398	0.564	C	7.68	0.006	0.5
ST LEDD	NeuroX_rs5215000	TMEM163	intronic	2	135367656	A	0.390	0.558	C	7.93	0.005	0.5
ST LEDD	NeuroX_rs17072993	FYN	intronic	6	112171130	T	0.102	0.186	C	3.87	0.049	0.5
ST LEDD	NeuroX_rs2677273	STK39;CERS6	intergenic	2	169157332	T	0.390	0.564	A	8.49	0.004	0.5
ST LEDD	NeuroX_rs1517340	STK39;CERS6	intergenic	2	169158403	G	0.390	0.564	A	8.49	0.004	0.5
ST LEDD	NeuroX_rs13410301	TMEM163	intronic	2	135353183	T	0.373	0.558	C	9.62	0.002	0.5
ST LEDD	NeuroX_rs9962882	RIT2	intronic	18	40601298	C	0.136	0.250	T	5.65	0.017	0.5
ST LEDD	NeuroX_rs1789622	RIT2	intronic	18	40546914	G	0.136	0.267	T	7.24	0.007	0.4
ST LEDD	NeuroX_rs13340407	FYN	intronic	6	112157615	C	0.085	0.186	T	5.80	0.016	0.4
ST LEDD	NeuroX_rs7775711	FYN	intronic	6	112161786	A	0.085	0.186	G	5.80	0.016	0.4
ST LEDD	NeuroX_rs7749147	FYN	intronic	6	112164313	A	0.085	0.186	G	5.80	0.016	0.4
ST LEDD	NeuroX_rs59856565	FYN	intronic	6	112164441	G	0.085	0.186	A	5.80	0.016	0.4
ST LEDD	NeuroX_rs9487736	FYN	intronic	6	112168309	A	0.085	0.186	G	5.80	0.016	0.4
ST LEDD	NeuroX_rs943437	FYN;WISP3	intergenic	6	112242253	G	0.085	0.192	A	6.36	0.012	0.4
ST LEDD	NeuroX_rs547076	FYN;WISP3	intergenic	6	112273477	T	0.085	0.192	C	6.36	0.012	0.4
ST LEDD	NeuroX_rs671271	FYN;WISP3	intergenic	6	112261385	T	0.093	0.209	C	6.94	0.008	0.4
ST LEDD	NeuroX_rs6752634	TMEM163	intronic	2	135407355	A	0.085	0.194	G	6.56	0.010	0.4
ST LEDD	exm-rs10092658	FAM49B;MIR5194	intergenic	8	130980472	T	0.042	0.111	C	4.28	0.039	0.4
ST LEDD	NeuroX_rs9400505	FYN	intronic	6	112110528	C	0.085	0.209	T	8.14	0.004	0.3
ST LEDD	NeuroX_rs626007	FYN;WISP3	intergenic	6	112258027	C	0.085	0.209	T	8.14	0.004	0.3
ST LEDD	NeuroX_rs9481189	FYN	intronic	6	112113938	C	0.076	0.200	T	8.40	0.004	0.3
ST LEDD	NeuroX_rs9374289	FYN	intronic	6	112111394	A	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs2881040	FYN	intronic	6	112114308	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs9374291	FYN	intronic	6	112114791	C	0.076	0.204	T	8.80	0.003	0.3
ST LEDD	NeuroX_rs1409839	FYN	intronic	6	112115355	C	0.076	0.204	T	8.80	0.003	0.3
ST LEDD	NeuroX_rs6939727	FYN	intronic	6	112116451	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs6908866	FYN	intronic	6	112118505	C	0.076	0.204	A	8.80	0.003	0.3
ST LEDD	NeuroX_rs6919306	FYN	intronic	6	112119619	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs1022649	FYN	intronic	6	112119981	G	0.076	0.204	A	8.80	0.003	0.3
ST LEDD	NeuroX_rs2182643	FYN	intronic	6	112121096	A	0.076	0.204	G	8.80	0.003	0.3
ST LEDD	exm2266333	FYN	intronic	6	112121228	A	0.076	0.204	G	8.80	0.003	0.3
ST LEDD	NeuroX_rs9487722	FYN	intronic	6	112121766	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs2148710	FYN	intronic	6	112122226	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs9487723	FYN	intronic	6	112124440	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs9387038	FYN	intronic	6	112125335	C	0.076	0.204	T	8.80	0.003	0.3
ST LEDD	NeuroX_rs7758660	FYN	intronic	6	112128947	C	0.076	0.204	T	8.80	0.003	0.3
ST LEDD	NeuroX_rs9481192	FYN	intronic	6	112130478	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs9387040	FYN	intronic	6	112131578	A	0.076	0.204	G	8.80	0.003	0.3
ST LEDD	NeuroX_rs7757969	FYN	intronic	6	112132032	C	0.076	0.204	T	8.80	0.003	0.3
ST LEDD	NeuroX_rs1327201	FYN	intronic	6	112141732	C	0.076	0.204	T	8.80	0.003	0.3
ST LEDD	NeuroX_rs2064700	FYN	intronic	6	112141908	G	0.076	0.204	A	8.80	0.003	0.3
ST LEDD	NeuroX_rs7572077	FYN	intronic	6	112147107	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs6921229	FYN	intronic	6	112148293	T	0.076	0.204	C	8.80	0.003	0.3
ST LEDD	NeuroX_rs93834810	FYN	intronic	6	112149373	G	0.076	0.204	A	8.80	0.003	0.3
ST LEDD	NeuroX_rs481262	FYN;WISP3	intergenic	6	112261489	G	0.076	0.204	A	8.80	0.003	0.3
ST LEDD	NeuroX_rs6724866	TMEM163	intronic	2	135407310	A	0.048	0.141	C	5.66	0.017	0.3
ST LEDD	NeuroX_rs484800	FYN;WISP3	intergenic	6	112255266	G	0.034	0.105	T	5.00	0.025	0.3
ST LEDD	exm1047003	HIP1R	exonic	12	123344021	A	0.025	0.087	G	4.59	0.032	0.3
ST LEDD	NeuroX_rs2182644	FYN	intronic	6	112138882	A	0.042	0.145	G	8.00	0.005	0.3
ST LEDD	NeuroX_rs61397446	FYN	intronic	6	112150430	G	0.042	0.145	A	8.00	0.005	0.3
ST LEDD	exm433945	NEK1	exonic	4	170477125	A	0.017	0.070	G	4.25	0.039	0.2

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ.	P	OR
ST Axial	exm1330732	CRHR1	exonic	17	43906973	A	0.044	0.005	G	5.84	0.016	9.4
		LINC01012;LOC1001312										
ST Axial	NeuroX_rs9461403	89	intergenic	6	27713528	T	0.067	0.020	G	4.21	0.040	3.6
ST Axial	NeuroX_rs9468230	BL	intergenic	6	27752699	G	0.067	0.020	T	4.21	0.040	3.6
ST Axial	NeuroX_dbSNP_rs11	LOC100131289;HIST1H2										
ST Axial	5250161	BL	intergenic	6	27756856	C	0.067	0.020	A	4.21	0.040	3.6
ST Axial	exm-rs3885683	DLG2	intronic	11	83455707	G	0.211	0.098	A	6.94	0.008	2.5
ST Axial	exm-rs9556711	MBNL2	intronic	13	98016416	A	0.122	0.054	G	4.21	0.040	2.4
ST Axial	exm-rs10810865	SH3GL2;ADAMTSL1	intergenic	9	17895105	C	0.211	0.103	T	6.22	0.013	2.3
ST Axial	NeuroX_rs3857047	GPRIN3;SNCA	intergenic	4	90606518	C	0.156	0.074	A	4.73	0.030	2.3
ST Axial	NeuroX_rs73034300	IGSF9B;LOC100128239	intergenic	11	133828084	T	0.278	0.142	C	7.66	0.006	2.3
ST Axial	NeuroX_rs56096503	IGSF9B;LOC100128239	intergenic	11	133833426	A	0.278	0.142	C	7.66	0.006	2.3
ST Axial	NeuroX_rs7121423	IGSF9B;LOC100128239	intergenic	11	133851014	C	0.322	0.172	T	8.32	0.004	2.3
ST Axial	NeuroX_rs11223657	IGSF9B;LOC100128239	intergenic	11	133843204	A	0.311	0.167	G	7.83	0.005	2.3
ST Axial	NeuroX_rs11223625	IGSF9B	intronic	11	133796676	C	0.278	0.152	A	6.41	0.011	2.1
ST Axial	NeuroX_rs34013297	MIR4697HG;IGSF9B	intergenic	11	133774078	A	0.341	0.195	C	7.14	0.008	2.1
ST Axial	NeuroX_rs62297083	GAK	intronic	4	897428	G	0.289	0.163	A	6.08	0.014	2.1
ST Axial	exm2266278	PRKN	intronic	6	161974956	A	0.500	0.328	G	7.80	0.005	2.0
ST Axial	NeuroX_rs3802928	IGSF9B	intronic	11	133786945	G	0.300	0.177	T	5.66	0.017	2.0
ST Axial	NeuroX_rs11223616	MIR4697HG;IGSF9B	intergenic	11	133772838	C	0.333	0.201	T	5.97	0.015	2.0
ST Axial	NeuroX_rs626007	FYN;WISP3	intergenic	6	112258027	C	0.222	0.128	T	4.25	0.039	2.0
ST Axial	NeuroX_rs547076	FYN;WISP3	intergenic	6	112273477	T	0.211	0.123	C	3.85	0.050	1.9
ST Axial	exm2259886	DLG2	intronic	11	84146142	T	0.300	0.186	C	4.69	0.030	1.9
ST Axial	exm1330395	MAP3K14	exonic	17	43342141	G	0.333	0.211	C	5.03	0.025	1.9
ST Axial	NeuroX_rs73032062	IGSF9B	intronic	11	133784410	A	0.278	0.172	C	4.34	0.037	1.9
ST Axial	NeuroX_rs901035	IGSF9B	intronic	11	133784499	A	0.278	0.172	G	4.34	0.037	1.9
ST Axial	exm-rs356219	GPRIN3;SNCA	intergenic	4	90637601	A	0.556	0.406	G	5.63	0.018	1.8
ST Axial	NeuroX_rs79462449	HLA-DRA;HLA-DRB5	intergenic	6	32431886	G	0.533	0.386	A	5.50	0.019	1.8
	NeuroX_dbSNP_rs11											
ST Axial	5918645	HLA-DRA;HLA-DRB5	intergenic	6	32428115	A	0.400	0.275	G	4.57	0.032	1.8
ST Axial	exm-rs9268853	HLA-DRA;HLA-DRB5	intergenic	6	32429643	C	0.433	0.304	T	4.64	0.031	1.8
	NeuroX_dbSNP_rs11											
ST Axial	4706637	HLA-DRA;HLA-DRB5	intergenic	6	32429825	T	0.433	0.304	C	4.64	0.031	1.8
ST Axial	NeuroX_rs9268905	HLA-DRA;HLA-DRB5	intergenic	6	32432077	C	0.433	0.304	G	4.64	0.031	1.8
ST Axial	exm-rs9268923	HLA-DRA;HLA-DRB5	intergenic	6	32432835	T	0.433	0.304	C	4.64	0.031	1.8
ST Axial	exm-rs2395185	HLA-DRA;HLA-DRB5	intergenic	6	32433167	T	0.433	0.304	G	4.64	0.031	1.8
ST Axial	exm-rs356220	GPRIN3;SNCA	intergenic	4	90641340	C	0.544	0.407	T	4.78	0.029	1.7
ST Axial	exm1167070	VPS13C	exonic	15	62259637	C	0.500	0.368	T	4.53	0.033	1.7
ST Axial	NeuroX_rs34008571	MSR1;FGF20	intergenic	8	16723234	C	0.478	0.353	T	4.09	0.043	1.7
ST Axial	NeuroX_rs603174	DLG2	intronic	11	83274615	A	0.333	0.456	G	3.85	0.050	0.6
ST Axial	NeuroX_rs641838	DLG2	intronic	11	83285873	C	0.333	0.456	A	3.85	0.050	0.6
ST Axial	NeuroX_rs694613	DLG2	intronic	11	83312499	A	0.344	0.470	G	4.02	0.045	0.6
ST Axial	NeuroX_rs668625	DLG2	intronic	11	83310805	C	0.344	0.471	T	4.05	0.044	0.6
ST Axial	NeuroX_rs611766	DLG2	intronic	11	83313133	C	0.344	0.471	T	4.05	0.044	0.6
ST Axial	NeuroX_rs553935	DLG2	intronic	11	83313402	G	0.344	0.471	A	4.05	0.044	0.6
ST Axial	NeuroX_rs598934	DLG2	intronic	11	83313673	C	0.344	0.471	T	4.05	0.044	0.6
ST Axial	NeuroX_rs583850	DLG2	intronic	11	83313875	G	0.344	0.471	T	4.05	0.044	0.6
ST Axial	NeuroX_rs582207	DLG2	intronic	11	83315064	C	0.344	0.471	T	4.05	0.044	0.6
ST Axial	NeuroX_rs633191	DLG2	intronic	11	83318572	C	0.344	0.471	T	4.05	0.044	0.6
ST Axial	NeuroX_rs6592119	DLG2	intronic	11	83233298	G	0.333	0.461	A	4.16	0.041	0.6
ST Axial	NeuroX_rs2436158	DLG2	intronic	11	83282729	C	0.333	0.461	T	4.16	0.041	0.6
ST Axial	NeuroX_rs489752	DLG2	intronic	11	83294978	T	0.333	0.461	C	4.16	0.041	0.6
ST Axial	NeuroX_rs491592	DLG2	intronic	11	83295176	C	0.333	0.461	T	4.16	0.041	0.6
ST Axial	NeuroX_rs6854472	GPRIN3;SNCA	intergenic	4	90434672	T	0.311	0.436	G	4.08	0.043	0.6
ST Axial	NeuroX_rs634368	DLG2	intronic	11	83324911	A	0.322	0.451	G	4.28	0.039	0.6
ST Axial	exm2267199	DLG2	intronic	11	83267970	G	0.333	0.465	A	4.44	0.035	0.6
ST Axial	NeuroX_rs575952	DLG2	intronic	11	83263551	G	0.333	0.466	A	4.48	0.034	0.6
ST Axial	NeuroX_rs2512689	DLG2	intronic	11	83264100	C	0.333	0.466	T	4.48	0.034	0.6
ST Axial	NeuroX_rs631277	DLG2	intronic	11	83265515	A	0.333	0.466	C	4.48	0.034	0.6
ST Axial	NeuroX_rs581178	DLG2	intronic	11	83267048	A	0.333	0.466	G	4.48	0.034	0.6
ST Axial	NeuroX_rs473255	DLG2	intronic	11	83267256	G	0.333	0.466	A	4.48	0.034	0.6
ST Axial	NeuroX_rs663399	DLG2	intronic	11	83268083	T	0.333	0.466	C	4.48	0.034	0.6
ST Axial	NeuroX_rs483020	DLG2	intronic	11	83269758	T	0.333	0.466	C	4.48	0.034	0.6
ST Axial	NeuroX_rs600570	DLG2	intronic	11	83269872	G	0.333	0.466	A	4.48	0.034	0.6
ST Axial	NeuroX_rs601826	DLG2	intronic	11	83270096	A	0.333	0.466	G	4.48	0.034	0.6
ST Axial	NeuroX_rs585240	DLG2	intronic	11	83321047	G	0.333	0.466	A	4.48	0.034	0.6
ST Axial	NeuroX_rs583944	DLG2	intronic	11	83321302	A	0.333	0.466	G	4.48	0.034	0.6
ST Axial	NeuroX_rs1228630	DLG2	intronic	11	83267560	T	0.330	0.464	C	4.48	0.034	0.6
ST Axial	NeuroX_rs3815986	DLG2	intronic	11	83184482	G	0.322	0.456	A	4.60	0.032	0.6
ST Axial	exm2265086	ITPKB	intronic	1	22683304	A	0.389	0.529	G	4.94	0.026	0.6
ST Axial	NeuroX_rs10898126	DLG2	intronic	11	83188844	G	0.311	0.446	T	4.72	0.030	0.6
ST Axial	exm1166805	VPS13C	exonic	15	62202482	C	0.378	0.525	T	5.39	0.020	0.6
ST Axial	NeuroX_rs514398	DLG2	intronic	11	83270670	A	0.322	0.466	G	5.27	0.022	0.5
ST Axial	NeuroX_rs2009715	DLG2	intronic	11	83211686	T	0.300	0.441	C	5.14	0.023	0.5
ST Axial	NeuroX_rs2374424	DLG2	intronic	11	83187113	A	0.300	0.441	G	5.20	0.023	0.5
ST Axial	NeuroX_rs598246	DLG2	intronic	11	83185861	T	0.311	0.456	G	5.40	0.020	0.5
ST Axial	NeuroX_rs1469609	DLG2	intronic	11	83193765	G	0.311	0.456	T	5.40	0.020	0.5
ST Axial	NeuroX_rs11233649	DLG2	intronic	11	83221390	A	0.311	0.456	C	5.40	0.020	0.5
ST Axial	NeuroX_rs4341564	DLG2	intronic	11	83231605	A	0.311	0.456	G	5.40	0.020	0.5
ST Axial	exm-rs6923504	HLA-DRA;HLA-DRB5	intergenic	6	32428186	G	0.278	0.417	C	5.15	0.023	0.5
ST Axial	exm-rs6903608	HLA-DRA;HLA-DRB5	intergenic	6	32428285	C	0.278	0.417	T	5.15	0.023	0.5
ST Axial	NeuroX_rs6919855	HLA-DRA;HLA-DRB5	intergenic	6	32429011	C	0.278	0.417	T	5.15	0.023	0.5
ST Axial	NeuroX_rs926880	HLA-DRA;HLA-DRB5	intergenic	6	32431358	T	0.278	0.417	G	5.15	0.023	0.5
ST Axial	NeuroX_rs9268882	HLA-DRA;HLA-DRB5	intergenic	6	32431623	T	0.278	0.417	C	5.15	0.023	0.5
ST Axial	NeuroX_rs11233632	DLG2	intronic	11	83190682	C	0.322	0.471	T	5.63	0.018	0.5
ST Axial	NeuroX_rs1469610	DLG2	intronic	11	83193595	G	0.300	0.451	T	5.91	0.015	0.5

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ.	P	OR
ST Axial	exm2269026	MSGN1;KCNS3	intergenic	2	18044028	C	0.356	0.515	T	6.36	0.012	0.5
ST Axial	NeuroX_rs1864774	DLG2	intronic	11	83199276	G	0.311	0.466	A	6.13	0.013	0.5
ST Axial	NeuroX_rs7948931	DLG2	intronic	11	83200563	C	0.311	0.466	T	6.13	0.013	0.5
ST Axial	NeuroX_rs1367982	DLG2	intronic	11	83202270	G	0.311	0.466	A	6.13	0.013	0.5
ST Axial	NeuroX_rs6592116	DLG2	intronic	11	83203488	C	0.311	0.466	T	6.13	0.013	0.5
ST Axial	NeuroX_rs7131385	DLG2	intronic	11	83204471	G	0.311	0.466	A	6.13	0.013	0.5
ST Axial	NeuroX_rs7927629	DLG2	intronic	11	83205247	C	0.311	0.466	T	6.13	0.013	0.5
ST Axial	NeuroX_rs10898127	DLG2	intronic	11	83208125	G	0.311	0.466	T	6.13	0.013	0.5
ST Axial	NeuroX_rs4631423	CTSB	downstream	8	11699279	T	0.111	0.211	C	4.20	0.040	0.5
ST Axial	NeuroX_dbSNP_rs11											
ST Axial	5207614	HLA-DRA;HLA-DRB5	intergenic	6	32429594	A	0.311	0.500	G	9.01	0.003	0.5
ST Axial	NeuroX_rs9268863	HLA-DRA;HLA-DRB5	intergenic	6	32430289	A	0.311	0.505	G	9.49	0.002	0.4
ST Axial	exam-rs9268877	HLA-DRA;HLA-DRB5	intergenic	6	32431147	A	0.311	0.505	G	9.49	0.002	0.4
ST Axial	NeuroX_dbSNP_rs11											
ST Axial	6723474	HLA-DRA;HLA-DRB5	intergenic	6	32431606	T	0.311	0.505	A	9.49	0.002	0.4
ST Axial	6651295	HLA-DRA;HLA-DRB5	intergenic	6	32431927	C	0.311	0.505	T	9.49	0.002	0.4
ST Axial	NeuroX_dbSNP_rs92											
ST Axial	68937	HLA-DRA;HLA-DRB5	intergenic	6	32433399	A	0.311	0.505	G	9.49	0.002	0.4
ST Axial	NeuroX_dbSNP_rs92											
ST Axial	68979	HLA-DRA;HLA-DRB5	intergenic	6	32435044	T	0.311	0.505	C	9.49	0.002	0.4
ST Axial	exam-rs5026743	HLA-DRA;HLA-DRB5	intergenic	6	32439964	G	0.311	0.505	T	9.49	0.002	0.4
ST Axial	NeuroX_dbSNP_rs11											
ST Axial	6153879	HLA-DRA;HLA-DRB5	intergenic	6	32421794	G	0.067	0.152	A	4.13	0.042	0.4
ST Axial	NeuroX_rs823093	NUCKS1	intronic	1	205689227	C	0.022	0.083	T	3.86	0.050	0.3
ST Axial	NeuroX_rs1772146	NUCKS1	intronic	1	205696521	G	0.022	0.083	T	3.86	0.050	0.3
ST Axial	NeuroX_rs1620334	NUCKS1	intronic	1	205697845	C	0.022	0.083	T	3.86	0.050	0.3
ST Axial	exam-rs823128	NUCKS1	intronic	1	205713378	G	0.022	0.083	A	3.86	0.050	0.3
ST Axial	NeuroX_rs823131	NUCKS1	intronic	1	205714437	A	0.022	0.083	G	3.86	0.050	0.3
ST Axial	NeuroX_rs865402	NUCKS1	upstream	1	205719857	A	0.022	0.083	T	3.86	0.050	0.3
ST Axial	NeuroX_rs823115	NUCKS1	upstream	1	205720078	G	0.022	0.083	A	3.86	0.050	0.3
ST Axial	NeuroX_rs823120	NUCKS1;RAB29	intergenic	1	205724050	C	0.022	0.083	T	3.86	0.050	0.3
ST Axial	NeuroX_rs823124	NUCKS1;RAB29	intergenic	1	205726336	C	0.022	0.083	T	3.86	0.050	0.3
ST Axial	NeuroX_rs823147	NUCKS1;RAB29	intergenic	1	205733138	A	0.022	0.083	G	3.86	0.050	0.3
ST Axial	NeuroX_rs823153	RAB29	downstream	1	205736563	A	0.022	0.083	G	3.86	0.050	0.3
ST Axial	NeuroX_rs844005	RAB29	UTR3	1	205737450	T	0.022	0.083	C	3.86	0.050	0.3
ST Axial	NeuroX_rs823135	RAB29	UTR3	1	205738166	T	0.022	0.083	C	3.86	0.050	0.3
ST Axial	NeuroX_rs823136	RAB29	UTR3	1	205738251	C	0.022	0.083	A	3.86	0.050	0.3
ST Axial	NeuroX_rs1775144	RAB29;SLC41A1	intergenic	1	205756012	G	0.022	0.083	A	3.86	0.050	0.3
ST Axial	NeuroX_rs823138	RAB29	UTR3	1	205739192	T	0.022	0.088	C	4.29	0.038	0.2
LT LEDD	exam391692	LCORL	exonic	4	17910840	C	0.050	0.011	T	4.05	0.044	4.6
LT LEDD	exam59924	BAG3	exonic	10	121429394	A	0.050	0.011	G	4.05	0.044	4.6
LT LEDD	NeuroX_rs73178986	MCCC1	intronic	3	182815540	A	0.108	0.028	G	7.98	0.005	4.2
LT LEDD	NeuroX_rs62306284	GPRIN3;SNCA	intergenic	4	90642531	G	0.083	0.023	A	5.82	0.016	3.9
LT LEDD	NeuroX_rs78702810	SATB1	intronic	3	18462531	T	0.100	0.028	C	6.76	0.009	3.8
LT LEDD	NeuroX_rs74888441	SATB1	intronic	3	18450269	G	0.092	0.034	A	4.37	0.037	2.9
LT LEDD	exam1403864	SPPL2B	exonic	19	2344022	A	0.117	0.045	G	5.26	0.022	2.8
LT LEDD	NeuroX_rs3857047	GPRIN3;SNCA	intergenic	4	90606518	C	0.150	0.063	A	6.18	0.013	2.6
LT LEDD	NeuroX_rs79472400	89	intergenic	6	27688158	A	0.158	0.068	C	6.19	0.013	2.6
LT LEDD	NeuroX_rs16867942	89	intergenic	6	27696359	T	0.108	0.045	C	4.28	0.039	2.6
LT LEDD	NeuroX_rs77344783	89	intergenic	6	27721307	G	0.108	0.046	C	4.16	0.041	2.5
LT LEDD	NeuroX_rs13109825	GPRIN3;SNCA	intergenic	4	90602795	C	0.283	0.136	T	9.78	0.002	2.5
LT LEDD	NeuroX_rs10810812	SH3GL2	intronic	9	17586101	G	0.517	0.307	A	13.18	8	2.4
LT LEDD	NeuroX_rs9468216	89	intergenic	6	27721304	T	0.134	0.064	C	3.99	0.046	2.3
LT LEDD	NeuroX_rs34096562	MSR1;FGF20	intergenic	8	16701281	G	0.358	0.199	T	9.35	0.002	2.3
LT LEDD	exam-rs3815081	TRIM40	intronic	6	30114074	C	0.258	0.136	T	7.02	0.008	2.2
LT LEDD	NeuroX_rs7249727	SPPL2B	intronic	19	2346730	A	0.392	0.233	G	8.60	0.003	2.1
LT LEDD	NeuroX_rs1128402	SPPL2B	exonic	19	2353150	A	0.383	0.227	C	8.43	0.004	2.1
LT LEDD	NeuroX_rs11158028	GCH1;WDHD1	intergenic	14	55381070	T	0.250	0.136	C	6.18	0.013	2.1
LT LEDD	NeuroX_rs8017210	GCH1	intronic	14	55361836	A	0.258	0.142	G	6.29	0.012	2.1
LT LEDD	NeuroX_rs11852045	GCH1;WDHD1	intergenic	14	55381226	C	0.258	0.142	T	6.29	0.012	2.1
LT LEDD	NeuroX_rs8022453	GCH1;WDHD1	intergenic	14	55381790	A	0.258	0.142	G	6.29	0.012	2.1
LT LEDD	NeuroX_rs943913	GCH1;WDHD1	intergenic	14	55383145	C	0.258	0.142	T	6.29	0.012	2.1
LT LEDD	NeuroX_rs1107961	GCH1;WDHD1	intergenic	14	55384451	G	0.258	0.142	T	6.29	0.012	2.1
LT LEDD	NeuroX_rs72715547	GCH1;WDHD1	intergenic	14	55385723	G	0.258	0.142	A	6.29	0.012	2.1
LT LEDD	NeuroX_rs620490	MSR1;FGF20	intergenic	8	16697579	G	0.358	0.210	T	7.94	0.005	2.1
LT LEDD	NeuroX_rs8104896	SPPL2B	intronic	19	2352393	T	0.383	0.233	G	7.78	0.005	2.0
LT LEDD	NeuroX_rs535283	MSR1;FGF20	intergenic	8	16698710	C	0.333	0.199	T	6.82	0.009	2.0
LT LEDD	NeuroX_rs34544088	GCH1	intronic	14	55357502	A	0.250	0.142	G	5.50	0.019	2.0
LT LEDD	NeuroX_rs57095876	GCH1	intronic	14	55357742	G	0.250	0.142	A	5.50	0.019	2.0
LT LEDD	NeuroX_rs60258834	GCH1	intronic	14	55365786	A	0.250	0.142	C	5.50	0.019	2.0
LT LEDD	NeuroX_rs3759664	GCH1;WDHD1	intergenic	14	55371579	T	0.250	0.142	C	5.50	0.019	2.0
LT LEDD	NeuroX_rs55751189	GCH1;WDHD1	intergenic	14	55388723	A	0.250	0.142	G	5.50	0.019	2.0
LT LEDD	NeuroX_rs72715552	GCH1;WDHD1	intergenic	14	55394692	T	0.250	0.142	G	5.50	0.019	2.0
LT LEDD	NeuroX_rs7006980	MSR1;FGF20	intergenic	8	16716272	A	0.325	0.193	G	6.67	0.010	2.0
LT LEDD	NeuroX_rs7001099	MSR1;FGF20	intergenic	8	16716926	G	0.325	0.193	T	6.67	0.010	2.0
LT LEDD	NeuroX_rs11621165	GCH1;WDHD1	intergenic	14	55375426	A	0.258	0.148	G	5.61	0.018	2.0
LT LEDD	NeuroX_rs9325801	MSR1;FGF20	intergenic	8	16737672	G	0.308	0.182	T	6.39	0.011	2.0
LT LEDD	NeuroX_rs1028594	SH3GL2	intronic	9	17583310	G	0.383	0.239	A	7.15	0.007	2.0
LT LEDD	NeuroX_rs3746285	SPPL2B	exonic	19	2339949	T	0.417	0.267	C	7.25	0.007	2.0
LT LEDD	NeuroX_rs3746289	SPPL2B	intronic	19	2343142	A	0.383	0.241	G	6.82	0.009	2.0
LT LEDD	NeuroX_rs635475	MSR1;FGF20	intergenic	8	16698685	C	0.333	0.205	T	6.20	0.013	1.9

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ.	P	OR
LT LEDD	NeuroX_rs666028	MSR1;FGF20	intergenic	8	16700937	T	0.333	0.205	C	6.20	0.013	1.9
LT LEDD	NeuroX_rs1613369	MSR1;FGF20	intergenic	8	16701921	C	0.333	0.205	T	6.20	0.013	1.9
LT LEDD	NeuroX_rs693030	MSR1;FGF20	intergenic	8	16702511	T	0.333	0.205	C	6.20	0.013	1.9
LT LEDD	NeuroX_rs11626210	GCH1	intronic	14	55349549	T	0.233	0.136	C	4.63	0.031	1.9
LT LEDD	NeuroX_rs3759662	GCH1;WDHD1	intergenic	14	55370620	A	0.242	0.142	G	4.75	0.029	1.9
LT LEDD	NeuroX_rs55726650	GCH1;WDHD1	intergenic	14	55397257	G	0.242	0.142	T	4.75	0.029	1.9
LT LEDD	NeuroX_rs1747201	GCH1	intronic	14	55358877	G	0.267	0.161	A	4.89	0.027	1.9
LT LEDD	NeuroX_rs12986109	SPPL2B;TMPPRS9	intergenic	19	2360967	A	0.408	0.267	C	6.50	0.011	1.9
LT LEDD	NeuroX_rs62504203	MSR1;FGF20	intergenic	8	16719677	T	0.305	0.190	C	5.19	0.023	1.9
LT LEDD	NeuroX_rs685857	MSR1;FGF20	intergenic	8	16696443	C	0.325	0.205	T	5.47	0.019	1.9
LT LEDD	NeuroX_rs620513	MSR1;FGF20	intergenic	8	16697593	T	0.325	0.205	G	5.47	0.019	1.9
LT LEDD	NeuroX_rs635052	MSR1;FGF20	intergenic	8	16698598	A	0.325	0.205	G	5.47	0.019	1.9
LT LEDD	NeuroX_rs9644642	MSR1;FGF20	intergenic	8	16698418	C	0.317	0.199	T	5.33	0.021	1.9
LT LEDD	NeuroX_rs3758217	SH3GL2	upstream	9	17578502	G	0.383	0.250	A	6.00	0.014	1.9
LT LEDD	exm474247	ZNF608	exonic	5	123983915	T	0.592	0.438	G	6.78	0.009	1.9
LT LEDD	NeuroX_rs56276813	NUCKS1;RAB29	intergenic	1	205730573	T	0.308	0.193	G	5.19	0.023	1.9
LT LEDD	NeuroX_rs1832775	NUCKS1;RAB29	intergenic	1	205734032	A	0.308	0.193	G	5.19	0.023	1.9
LT LEDD	NeuroX_rs10149103	GCH1;WDHD1	intergenic	14	55380896	C	0.258	0.159	T	4.40	0.036	1.8
LT LEDD	NeuroX_rs1461943	KCNS3;RDH14	intergenic	2	18116319	A	0.225	0.136	G	3.93	0.047	1.8
LT LEDD	NeuroX_rs16892910	PRKN	intronic	6	162096342	T	0.242	0.148	C	4.16	0.041	1.8
LT LEDD	NeuroX_rs59935131	GCH1	intronic	14	55331772	G	0.242	0.148	A	4.16	0.041	1.8
LT LEDD	NeuroX_rs3783639	GCH1	intronic	14	55348666	C	0.233	0.142	T	4.05	0.044	1.8
LT LEDD	NeuroX_rs56013432	GCH1	intronic	14	55351179	C	0.233	0.142	T	4.05	0.044	1.8
LT LEDD	NeuroX_rs72713477	GCH1	intronic	14	55352041	C	0.233	0.142	T	4.05	0.044	1.8
LT LEDD	exm2266595	FGF20;MICU3	intergenic	8	16881740	G	0.575	0.426	A	6.33	0.012	1.8
LT LEDD	NeuroX_rs591323	MSR1;FGF20	intergenic	8	16697091	A	0.317	0.205	G	4.78	0.029	1.8
LT LEDD	NeuroX_rs2754341	CNTLN;SH3GL2	intergenic	9	17572069	C	0.375	0.250	T	5.30	0.021	1.8
LT LEDD	NeuroX_rs62502359	MSR1;FGF20	intergenic	8	16710258	T	0.308	0.199	C	4.65	0.031	1.8
LT LEDD	NeuroX_rs7825889	MSR1;FGF20	intergenic	8	16711396	T	0.308	0.199	C	4.65	0.031	1.8
LT LEDD	NeuroX_rs4442178	MSR1;FGF20	intergenic	8	16712292	G	0.308	0.199	A	4.65	0.031	1.8
LT LEDD	NeuroX_rs11203810	MSR1;FGF20	intergenic	8	16712361	T	0.308	0.199	G	4.65	0.031	1.8
LT LEDD	NeuroX_rs62504243	MSR1;FGF20	intergenic	8	16739127	G	0.292	0.188	A	4.38	0.036	1.8
LT LEDD	exm994623	LRRK2	exonic	12	40713901	A	0.392	0.267	T	5.11	0.024	1.8
LT LEDD	NeuroX_rs55672297	MSR1;FGF20	intergenic	8	16724432	A	0.258	0.165	G	3.87	0.049	1.8
LT LEDD	NeuroX_rs477516	MSR1;FGF20	intergenic	8	16713991	T	0.317	0.210	C	4.27	0.039	1.7
LT LEDD	NeuroX_rs62171443	TMEM163;ACMSD	intergenic	2	135594221	C	0.367	0.250	T	4.65	0.031	1.7
LT LEDD	NeuroX_rs12234982	MSR1;FGF20	intergenic	8	16713686	T	0.308	0.205	C	4.14	0.042	1.7
LT LEDD	NeuroX_rs35666858	MSR1;FGF20	intergenic	8	16716204	C	0.292	0.193	T	3.87	0.049	1.7
LT LEDD	NeuroX_rs6991493	MSR1;FGF20	intergenic	8	16716336	G	0.292	0.193	A	3.87	0.049	1.7
LT LEDD	NeuroX_rs10420958	SPPL2B	UTR3	19	2353368	G	0.525	0.392	A	5.11	0.024	1.7
LT LEDD	NeuroX_rs757322	SPPL2B;TMPPRS9	intergenic	19	2360854	A	0.525	0.398	G	4.67	0.031	1.7
LT LEDD	NeuroX_rs7030014	SH3GL2	intronic	9	17581661	A	0.383	0.273	G	4.03	0.045	1.7
ncRNA_exon												
LT LEDD	exm2264808	PINK1-AS	ic	1	20978058	G	0.492	0.369	A	4.39	0.036	1.7
LT LEDD	exm-rs1362104	TRIM31-AS1;TRIM40	intergenic	6	30101656	T	0.492	0.369	C	4.39	0.036	1.7
LT LEDD	exm2272983	DYRK1A;KCNJ6	intergenic	21	38899379	C	0.550	0.426	T	4.39	0.036	1.6
LT LEDD	NeuroX_rs2593405	CNTLN;SH3GL2	intergenic	9	17557130	G	0.325	0.443	A	4.17	0.041	0.6
LT LEDD	NeuroX_rs6491344	MBNL2	intronic	13	97914387	G	0.275	0.386	A	3.94	0.047	0.6
LT LEDD	NeuroX_rs10963153	SH3GL2	intronic	9	17589448	G	0.250	0.358	T	3.86	0.049	0.6
LT LEDD	NeuroX_rs3112578	CASC16	downstream	16	52585440	G	0.250	0.358	A	3.86	0.049	0.6
LT LEDD	exm2260277	LINC00456;MBNL2	intergenic	13	97835876	C	0.317	0.438	T	4.39	0.036	0.6
NeuroX_dbSNP_rs11												
LT LEDD	3663059	MAPT-AS1	nic	17	43945100	A	0.350	0.477	G	4.73	0.030	0.6
LT LEDD	NeuroX_rs7029216	SH3GL2	intronic	9	17581039	A	0.250	0.364	G	4.25	0.039	0.6
ncRNA_intro												
LT LEDD	NeuroX_rs242928	MAPT-AS1	nic	17	43943051	T	0.358	0.494	C	5.36	0.021	0.6
LT LEDD	NeuroX_rs28463809	TOX3;CASC16	intergenic	16	52583054	T	0.258	0.381	G	4.82	0.028	0.6
LT LEDD	exm2259268	SH3GL2	intronic	9	17736342	T	0.417	0.563	G	6.07	0.014	0.6
LT LEDD	NeuroX_rs6852450	BST1;CD38	intergenic	4	15742986	T	0.283	0.421	C	5.79	0.016	0.5
LT LEDD	NeuroX_rs1536066	SH3GL2	intronic	9	17735905	T	0.333	0.483	C	6.55	0.011	0.5
LT LEDD	NeuroX_rs11233907	DLG2	intronic	11	83821860	C	0.250	0.392	T	6.47	0.011	0.5
LT LEDD	NeuroX_rs76904798	LINC02471;LRRK2	intergenic	12	40614434	T	0.150	0.256	C	4.76	0.029	0.5
LT LEDD	exm2256893	ZNF608	exonic	5	123984763	C	0.200	0.330	T	5.98	0.014	0.5
NeuroX_dbSNP_rs11												
LT LEDD	6170705	LINC02210-CRHR1	intronic	17	43784777	G	0.133	0.233	A	4.55	0.033	0.5
LT LEDD	NeuroX_rs55931365	RIT2	intronic	18	40686069	G	0.133	0.233	T	4.55	0.033	0.5
LT LEDD	NeuroX_rs55942204	RIT2	intronic	18	40686175	G	0.133	0.233	A	4.55	0.033	0.5
LT LEDD	NeuroX_rs66737902	LRRK2	UTR3	12	40761663	C	0.117	0.207	T	4.10	0.043	0.5
LT LEDD	NeuroX_rs35519415	BST1	intronic	4	15710330	C	0.280	0.437	A	7.42	0.006	0.5
LT LEDD	NeuroX_rs7928811	DLG2	intronic	11	83816482	T	0.242	0.392	G	7.29	0.007	0.5
LT LEDD	NeuroX_rs34559912	BST1	intronic	4	15730146	G	0.250	0.404	T	7.04	0.008	0.5
LT LEDD	NeuroX_rs4541502	BST1	intronic	4	15712787	T	0.292	0.460	G	8.51	0.004	0.5
LT LEDD	NeuroX_rs3924792	RIT2	intronic	18	40691463	C	0.123	0.229	T	5.03	0.025	0.5
LT LEDD	NeuroX_rs4698415	BST1;CD38	intergenic	4	15743391	T	0.108	0.210	C	5.28	0.022	0.5
LT LEDD	NeuroX_rs7294619	LINC02471;LRRK2	intergenic	12	40617202	C	0.108	0.210	T	5.28	0.022	0.5
LT LEDD	NeuroX_rs11175645	LRRK2	intronic	12	40621892	G	0.108	0.210	A	5.28	0.022	0.5
LT LEDD	NeuroX_rs11175655	LRRK2	intronic	12	40623727	A	0.108	0.210	G	5.28	0.022	0.5
LT LEDD	NeuroX_rs11175658	LRRK2	intronic	12	40624310	G	0.108	0.210	A	5.28	0.022	0.5
LT LEDD	NeuroX_rs3213710	BST1	intronic	4	15717321	C	0.292	0.477	T	10.22	0.001	0.5
LT LEDD	NeuroX_rs11724635	BST1;CD38	intergenic	4	15737101	C	0.250	0.426	A	9.67	0.002	0.4
LT LEDD	exm-rs4698412	BST1;CD38	intergenic	4	15737348	G	0.250	0.426	A	9.67	0.002	0.4
LT LEDD	NeuroX_rs10005305	FAM200B;BST1	intergenic	4	15694890	G	0.200	0.358	A	8.58	0.003	0.4
LT LEDD	NeuroX_rs5848779	FAM200B;BST1	intergenic	4	15695497	C	0.200	0.358	T	8.58	0.003	0.4
LT LEDD	NeuroX_rs3277595	LRRK2;MUC19	intergenic	12	40778979	A	0.092	0.184	G	4.84	0.028	0.4
LT LEDD	NeuroX_rs11175620	LINC02471;LRRK2	intergenic	12	40610864	C	0.108	0.218	G	6.00	0.014	0.4
LT LEDD	NeuroX_rs11564275	LINC02471;LRRK2	intergenic	12	40564051	T	0.067	0.142	G	4.09	0.043	0.4
LT LEDD	NeuroX_rs17465428	LINC02471;LRRK2	intergenic	12	40568945	A	0.067	0.142	G	4.09	0.043	0.4

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ.	P	OR
LT LEDD	NeuroX_rs11564116	LINCO2471;LRRK2	intergenic	12	40569777	T	0.067	0.142	C	4.09	0.043	0.4
LT LEDD	NeuroX_rs4113954	LRRK2;MUC19	intergenic	12	40767997	A	0.092	0.190	G	5.36	0.021	0.4
LT LEDD	NeuroX_rs4698413	BST1;CD38	intergenic	4	15737882	C	0.242	0.426	T	10.65	0.001	0.4
LT LEDD	NeuroX_rs17520775	LRRK2;MUC19	intergenic	12	40773020	T	0.092	0.193	C	5.70	0.017	0.4
LT LEDD	NeuroX_rs17444515	LRRK2;MUC19	intergenic	12	40783688	A	0.083	0.182	G	5.68	0.017	0.4
LT LEDD	NeuroX_rs1349820	DLG2	intronic	11	83904512	A	0.142	0.296	G	9.44	0.002	0.4
LT LEDD	NeuroX_rs10034735	BST1	intronic	4	15725455	A	0.067	0.161	G	5.87	0.015	0.4
LT LEDD	NeuroX_rs823139	RAB29	UTR3	1	205739396	T	0.075	0.182	G	6.82	0.009	0.4
LT LEDD	NeuroX_rs73277585	LRRK2;MUC19	intergenic	12	40776457	G	0.060	0.193	A	10.22	0.001	0.3
LT Axial	exm159152	SIPA1L2	exonic	1	232561520	A	0.050	0.004	G	6.99	0.008	12.9
LT Axial	exm746293	PRSS3	exonic	9	33798528	G	0.050	0.004	A	6.99	0.008	12.9
NeuroX_dbSNP_rs11												
LT Axial	7922937	DLG2	intronic	11	83326439	T	0.075	0.008	C	8.96	0.003	9.9
NeuroX_chr11:83328												
LT Axial	942	DLG2	intronic	11	83328942	C	0.075	0.008	A	8.96	0.003	9.9
LT Axial	exm391692	LCORL	exonic	4	17910840	C	0.075	0.016	T	4.97	0.026	4.9
LT Axial	exm1361164	DNAH17	exonic	17	76511038	C	0.075	0.016	T	4.97	0.026	4.9
LT Axial	NeuroX_rs8062326	ITPR1L2;SYT17	intergenic	16	19156015	A	0.100	0.033	G	3.90	0.048	3.3
LT Axial	NeuroX_rs6996220	MSR1;FGF20	intergenic	8	16746397	C	0.150	0.053	T	5.24	0.022	3.2
LT Axial	exm-rs871392	LINCO2400;GXLYT1	intergenic	12	42171982	A	0.350	0.146	G	9.89	0.002	3.1
LT Axial	NeuroX_rs12955281	RT2	intronic	18	40682286	C	0.650	0.386	T	9.81	0.002	3.0
LT Axial	exm2272983	DYRK1A;KCNJ6	intergenic	21	38899379	C	0.700	0.443	T	9.10	0.003	2.9
LT Axial	exm-rs10501570	DLG2	intronic	11	84417846	C	0.400	0.187	T	9.19	0.002	2.9
LT Axial	NeuroX_rs11223625	IGSF9B	intronic	11	133796676	C	0.350	0.163	A	7.89	0.005	2.8
LT Axial	NeuroX_rs1051547	SYT17	UTR3	16	19279380	T	0.600	0.362	C	8.17	0.004	2.6
LT Axial	NeuroX_rs11343	SYT17	UTR3	16	19279464	A	0.600	0.362	C	8.17	0.004	2.6
LT Axial	NeuroX_rs73034300	IGSF9B;LOC100128239	intergenic	11	133828084	T	0.325	0.159	C	6.41	0.011	2.6
LT Axial	NeuroX_rs56096503	IGSF9B;LOC100128239	intergenic	11	133833426	A	0.325	0.159	C	6.41	0.011	2.6
LT Axial	exm1521277	DDRGK1	exonic	20	3171337	T	0.300	0.146	C	5.82	0.016	2.5
LT Axial	NeuroX_rs10163682	RT2;SYT4	intergenic	18	40701725	T	0.625	0.423	C	5.68	0.017	2.3
LT Axial	NeuroX_rs1293331	FDFT1;CTSB	intergenic	8	11698436	T	0.342	0.186	C	4.81	0.028	2.3
LT Axial	NeuroX_rs732999	SYT17	intronic	16	19268837	C	0.525	0.329	T	5.75	0.017	2.3
LT Axial	NeuroX_rs6497337	SYT17	intronic	16	19244424	A	0.500	0.309	G	5.63	0.018	2.2
LT Axial	NeuroX_rs7192499	SYT17	intronic	16	19250894	A	0.550	0.354	G	5.62	0.018	2.2
LT Axial	NeuroX_rs708384	FAM171A2	intronic	17	42437682	T	0.550	0.354	G	5.62	0.018	2.2
LT Axial	NeuroX_rs708383	FAM171A2	intronic	17	42437754	T	0.550	0.354	C	5.62	0.018	2.2
LT Axial	NeuroX_rs8045829	SYT17	intronic	16	19271032	T	0.525	0.337	G	5.23	0.022	2.2
LT Axial	NeuroX_rs34013297	MIR4697HG;IGSF9B	intergenic	11	133774078	A	0.375	0.217	C	4.72	0.030	2.2
LT Axial	NeuroX_rs11223626	IGSF9B	intronic	11	133800477	C	0.500	0.317	A	5.11	0.024	2.2
LT Axial	NeuroX_rs73032062	IGSF9B	intronic	11	133784410	A	0.325	0.183	C	4.30	0.038	2.2
LT Axial	NeuroX_rs901035	IGSF9B	intronic	11	133784499	A	0.325	0.183	G	4.30	0.038	2.2
LT Axial	NeuroX_rs12445535	SYT17	UTR3	16	19279108	C	0.650	0.463	T	4.79	0.029	2.2
LT Axial	NeuroX_rs12969383	RT2	intronic	18	40624981	T	0.650	0.463	C	4.79	0.029	2.2
LT Axial	NeuroX_rs11223616	MIR4697HG;IGSF9B	intergenic	11	133772838	C	0.375	0.220	T	4.54	0.033	2.1
LT Axial	exm2273443	CTSB	UTR3	8	11702375	A	0.350	0.203	G	4.27	0.039	2.1
LT Axial	NeuroX_rs12445464	SYT17	UTR3	16	19278812	C	0.650	0.471	T	4.39	0.036	2.1
LT Axial	NeuroX_rs2740592	CTSB	UTR3	8	11701253	G	0.350	0.207	A	3.99	0.046	2.1
LT Axial	NeuroX_rs4839	CTSB	UTR3	8	11701933	C	0.350	0.207	T	3.99	0.046	2.1
LT Axial	NeuroX_rs1736081	CTSB	intronic	8	11702840	G	0.350	0.207	T	3.99	0.046	2.1
LT Axial	NeuroX_rs1736082	CTSB	intronic	8	11703420	T	0.350	0.207	C	3.99	0.046	2.1
LT Axial	NeuroX_rs6497338	SYT17	intronic	16	19274046	G	0.650	0.476	A	4.19	0.041	2.0
LT Axial	NeuroX_rs2023762	SYT17	intronic	16	19276597	T	0.650	0.476	C	4.19	0.041	2.0
LT Axial	NeuroX_rs62362521	PAM	intronic	5	102306061	A	0.400	0.248	G	4.04	0.044	2.0
LT Axial	NeuroX_rs6881225	PAM	intronic	5	102307592	C	0.400	0.248	T	4.04	0.044	2.0
LT Axial	NeuroX_rs10515341	PAM	intronic	5	102317117	A	0.400	0.248	G	4.04	0.044	2.0
LT Axial	NeuroX_rs10463990	PAM	intronic	5	102317418	A	0.400	0.248	G	4.04	0.044	2.0
LT Axial	NeuroX_rs7709726	PAM	intronic	5	102327463	T	0.400	0.248	C	4.04	0.044	2.0
LT Axial	NeuroX_rs7714539	PAM	intronic	5	102328878	A	0.400	0.248	G	4.04	0.044	2.0
LT Axial	NeuroX_rs60633061	PAM	intronic	5	102330049	T	0.400	0.248	C	4.04	0.044	2.0
LT Axial	NeuroX_rs62362544	PAM	intronic	5	102334247	T	0.400	0.248	C	4.04	0.044	2.0
LT Axial	exm2266278	PRKN	intronic	6	161974956	A	0.525	0.358	G	4.08	0.043	2.0
LT Axial	NeuroX_rs2352795	SYT17	intronic	16	19265885	G	0.525	0.358	T	4.08	0.043	2.0
LT Axial	exm153854	ITPKB	exonic	1	226923938	A	0.325	0.500	C	4.23	0.040	0.5
LT Axial	NeuroX_rs4815574	DDRGK1	downstream	20	3170172	C	0.275	0.455	T	4.56	0.033	0.5
LT Axial	NeuroX_rs7218457	LINCO2210-CRHR1	intronic	17	43802506	G	0.225	0.394	A	4.23	0.040	0.4
NeuroX_dbSNP_rs11												
LT Axial	5166600	LINCO2210-CRHR1	intronic	17	43784228	T	0.250	0.431	C	4.67	0.031	0.4
LT Axial	NeuroX_rs13099939	DCUN1D1;MCCC1	intergenic	3	182710230	C	0.200	0.370	A	4.39	0.036	0.4
LT Axial	exam2253426	RT2	intronic	18	40655271	A	0.175	0.342	G	4.40	0.036	0.4
LT Axial	NeuroX_rs11640961	SETD1A	intronic	16	30979818	T	0.250	0.450	C	5.63	0.018	0.4
LT Axial	NeuroX_rs4889603	SETD1A	intronic	16	30982225	G	0.250	0.451	A	5.71	0.017	0.4
LT Axial	NeuroX_rs4815573	LZTS3;DDRGK1	intergenic	20	3166671	T	0.250	0.455	C	5.93	0.015	0.4
LT Axial	NeuroX_rs58046886	LZTS3;DDRGK1	intergenic	20	3168430	G	0.250	0.455	A	5.93	0.015	0.4
LT Axial	NeuroX_rs1056881	LZTS3;DDRGK1	intergenic	20	3169729	T	0.250	0.455	C	5.93	0.015	0.4
LT Axial	NeuroX_rs2295545	LZTS3;DDRGK1	intergenic	20	3164686	C	0.250	0.459	T	6.15	0.013	0.4
LT Axial	exam159178	SIPA1L2	exonic	1	232574921	C	0.100	0.244	T	4.10	0.043	0.3
LT Axial	NeuroX_rs7225082	LINCO2210-CRHR1	intronic	17	43848495	G	0.175	0.382	T	6.46	0.011	0.3
LT Axial	NeuroX_rs8087199	RT2	intronic	18	40674041	A	0.225	0.484	G	9.32	0.002	0.3
LT Axial	NeuroX_rs8085083	RT2	intronic	18	40677365	A	0.225	0.484	G	9.32	0.002	0.3
LT Axial	exam2267838	LINCO2349;VPS13C	intergenic	15	62106862	G	0.075	0.215	A	4.31	0.038	0.3
LT Axial	NeuroX_rs4588066	RT2	intronic	18	40672964	A	0.150	0.382	G	8.15	0.004	0.3
LT Axial	NeuroX_rs12456492	RT2	intronic	18	40673380	G	0.150	0.382	A	8.15	0.004	0.3
LT Axial	exam-rs4130047	RT2	intronic	18	40678235	C	0.150	0.382	T	8.15	0.004	0.3
LT Axial	NeuroX_rs668802	MCCC1;LAMP3	intergenic	3	182838318	C	0.075	0.256	T	6.36	0.012	0.2
LT Axial	NeuroX_rs11664719	RT2	intronic	18	40640843	T	0.050	0.191	C	4.82	0.028	0.2
LT Axial	NeuroX_rs73951800	RT2	intronic	18	40642575	T	0.050	0.191	C	4.82	0.028	0.2
LT Axial	NeuroX_rs4077459	RT2	intronic	18	40651811	A	0.050	0.191	G	4.82	0.028	0.2

Cluster	NeuroX marker	Gene	Function	CHR	Position	A1	F_E	F_M	A2	CHISQ	P	OR
LT Axial	NeuroX_rs7244651	RIT2	intronic	18	40655156	C	0.050	0.191	T	4.82	0.028	0.2
LT Axial	NeuroX_rs11877437	RIT2	intronic	18	40658446	G	0.050	0.191	A	4.82	0.028	0.2
LT Axial	NeuroX_rs9948019	RIT2	intronic	18	40660098	G	0.050	0.191	A	4.82	0.028	0.2
LT Axial	NeuroX_rs868763	BST1;CD38	intergenic	4	15755905	C	0.050	0.203	T	5.43	0.020	0.2
LT Axial	NeuroX_rs9949064	RIT2	intronic	18	40678087	G	0.050	0.268	A	9.05	0.003	0.1
LT Axial	NeuroX_rs8096948	RIT2	intronic	18	40681293	C	0.050	0.268	T	9.05	0.003	0.1
LT Axial	NeuroX_rs12458426	RIT2	intronic	18	40679358	C	0.050	0.271	T	9.19	0.002	0.1
LT Axial	NeuroX_rs884474	BST1;CD38	intergenic	4	15756270	A	0.026	0.189	T	6.25	0.012	0.1
LT Axial	exm-rs6599389	TMEM175	intronic	4	939113	A	0.000	0.118	G	5.25	0.022	0.0
		LINC01012;LOC1001312										
LT Axial	NeuroX_rs9468216	89	intergenic	6	27721304	T	0.000	0.103	C	3.86	0.049	0.0
LT Axial	exm-rs3132676	TRIM40	UTR3	6	30116078	T	0.000	0.114	C	5.05	0.025	0.0

A1, allele 1; A2, allele 2; Axial, Axial subscore of the Unified Parkinson's Disease Rating Scale; CHISQ, chi-square association test; CHR, chromosome; F_E, allele frequency in excellent outcome group; F_M, allele frequency in moderate/poor outcome subgroup; P, p value; OR, odds ratio; LEDD, levodopa equivalent daily dose (mg/day); LT, long-term (~5 years); ST, short-term (~1 year).

Supplementary Table 3. Comparison of baseline clinical characteristics for patients with and without the observed rare variants in IP6K2, PRSS3, and CRHR1 and between patients with AA vs GG genotype of rs10810812 in SH3GL2.

Preclinical variable	IP6K2			PRSS3			CRHR1			SH3GL2		
median (N)	variants	non-variants	p	variants	non-variants	p	variants	non-variants	p	AA	GG	p
Age at onset (y)	60.0 (3)	45.0 (145)	0.21	42.0 (3)	45.0 (145)	0.83	48.0 (5)	45.0 (143)	0.25	45.0 (54)	48.0 (22)	0.37
Age at surgery (y)	66.0 (3)	58.0 (145)	0.11	63.0 (3)	58.0 (145)	0.33	66.0 (5)	58.0 (143)	0.03	57.5 (54)	60.5 (22)	0.07
Disease duration at surgery (y)	9.0 (3)	11.0 (145)	0.52	20.0 (3)	11.0 (145)	0.21	17.0 (5)	11.0 (143)	0.35	11.0 (54)	11.0 (22)	0.71
Pre-op UPDRS-III OFF L-dopa	39.5 (3)	39.0 (145)	0.77	38.5 (3)	39.5 (145)	0.87	41.0 (5)	39.0 (143)	0.43	40.0 (54)	39.3 (22)	0.26
Pre-op UPDRS-III ON L-dopa	16.0 (3)	15.0 (143)	0.64	14.0 (3)	15.0 (143)	0.43	14.0 (5)	15.0 (141)	0.70	15.0 (54)	13.5 (22)	0.39
L-dopa responsiveness (%)	57.6 (3)	62.2 (143)	0.51	69.3 (3)	61.5 (143)	0.74	57.1 (5)	61.8 (141)	0.95	63.7 (54)	61.2 (22)	0.83
Pre-op LEDD	970.0 (3)	1500 (144)	0.05	1680 (3)	1472 (144)	0.51	1650 (5)	1472 (142)	0.48	1560 (54)	1405 (22)	0.79
Pre-op axial subscore	6.50 (3)	8.0 (145)	0.20	10.0 (3)	8.0 (145)	0.29	9.0 (5)	8.0 (143)	0.51	8.3 (54)	6.3 (22)	0.09