

Supplementary Material

Curcumin Protects an SH-SY5Y Cell Model of Parkinson's Disease Against Toxic Injury by Regulating HSP90

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Figure S1

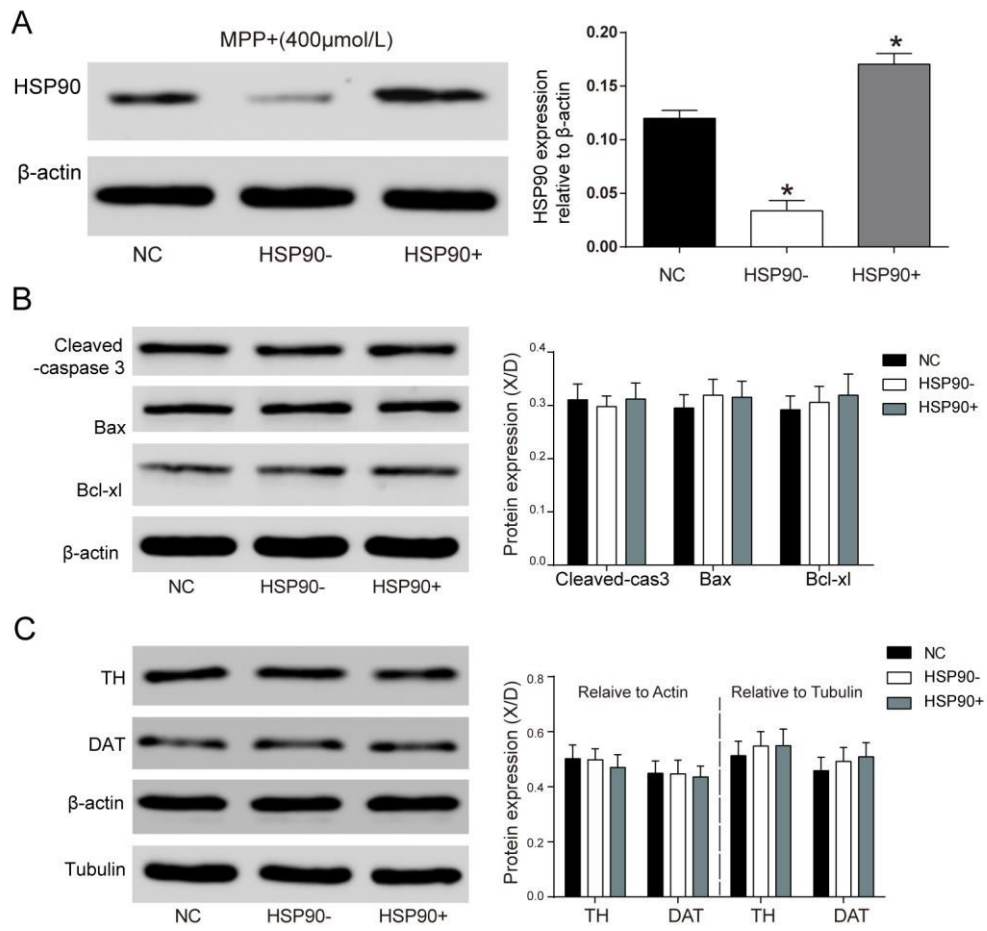


Figure S2

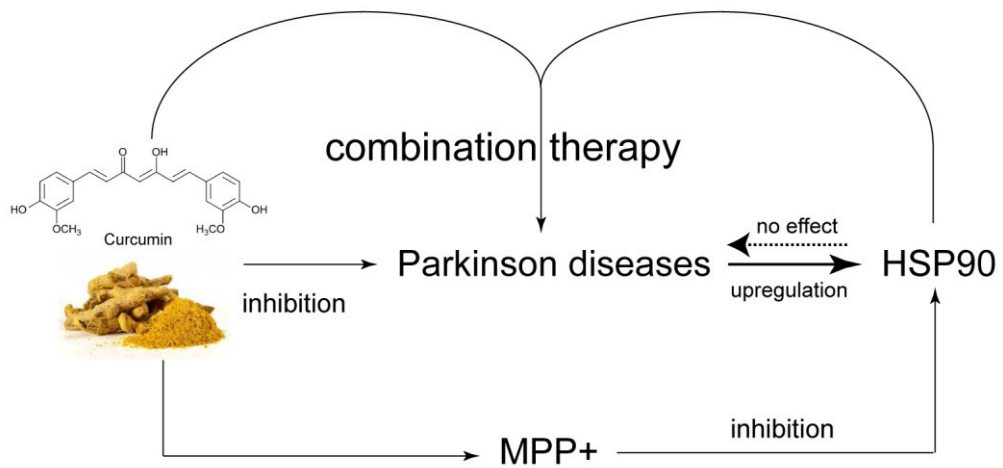


Figure S1 *HSP90* had little effect on MPP⁺-induced PD cells. (A) Western blot was performed to determine the protein level of Hsp90 after overexpression or downregulation of *HSP90*. The result indicated successful transfection in only MPP⁺ treatments. 1way-ANOVA: $F(2, 6) = 91.84, P < 0.0001$. * $P < 0.05$ compares to NC group. (B) The level of apoptosis-related protein cleaved caspase 3, Bax and Bcl-xl was detected via western blot. All bots were without differences ($P > 0.05$). (C) Protein levels of dopaminergic neuron markers TH and DAT were detected via western blot. All bots were without differences. HSP90- means *HSP90* knockdown with *HSP90* siRNA transfection and HSP90+ means *HSP90* overexpression with *HSP90* overexpressed vector transfection.

Figure S2 Cur protects against toxicity injury of PD in MPP⁺ cell models. *HSP90* is the direct interaction gene with Cur in PD-related genes and upregulated in MPP⁺ induced PD-model cells, which then could be decrease after Cur therapy. While regulating *HSP90* alone has no effect on PD cells, combination therapy of Cur and *HSP90* exerts an exciting result on treating PD.

Table S1 Genes searched on the database of DiGSeE in Nervous System Diseases.

Keywords	Related genes after deleting the duplicate value
Parkinson Disease, Secondary	VPS35;MAPT;GLA;PLA2G6;VPS26A;DNAJC13;SYNJ1;FBXO7;PSEN2;CACNA1A;PANK2;PARK7;GABRR3;DCTN1;SNCA;CHCHD2;LRRK2;TPP1;SQSTM1;PPEF1;PINK1;STXBP1;PDYN;ATP1A3;SH3TC2;TARDBP;SPR;AIFM1;OPA1;PARP1;DRD2;DNM2;CASP3;PARK2;POMC;GPR50;ATXN3;CACNA1G;HTR1A;SNCAIP;ALDH2;CP;POLG;SOD1;ANTXRL;COQ2;DDC;MAOB;PPT1;BCL2;SLC6A3;CD1D;CXCL12;SIRT1;GMCL1P1;NR3C2;CYP3A4;CALY;TPSG1;PDXP;TP53;TH;MIR410;OB GCL;
Parkinson Disease	LRRK2;SNCA;VPS35;LINGO1;RIT2;EPO;BDNF;STUB1;CD55;FGF20;TH;JUNB;GPR162;IGKV2D-29;SLC45A2;GBA;FOS;PSMC5;CCDC62;PDYN;PINK1;SOD2;UCHL1;EIF4G1;SLC6A3;CSF1;HS1BP3;DIO3;HLA-DRA;SP1;PARP1;SNCAIP;CYP2E1;TRPM7;NOS3;SYNM;GDNF;SLC32A1;SYNJ1;NR4A2;KRAS;SLC18A2;GPR37;MAPT;CNR1;PARK2;KCNJ11;PRNP;PDAP1;FGF2;NPPA;PARK7;UBR5;HTR1D;DRD2;BCL2;BST1;AIFM1;LAMP3;S100A6;COMT;ATP13A2;GAK;SCARB2;GCH1;TRIT1;SLC41A1;PARK16;HTT;RAB7L1;MTHFR;SHMT1;GRINA;VDR;GRM5;CYP2D6;DDC;TREM2;CERS2;ERBB4;ADORA2A;MYOC;POMC;GFRA1;CCK;RET;DNAJC13;CASP3;GLRX2;HSPB1;IGLV2-18;HFE;WNT1;TUBB3;CHRNA4;BRCA2;HMOX1;TRNA;ADRA1D;HSPA5;UCHL3;SLC11A2;HIST1H1B;POLR2E;4-Sep;GRIN2B;TGFB1;NR4A1;GAP43;CHCHD2;ESR1;ABCC8;GLA;EN1;NQO1;COQ2;CAST;GRIA1;SLCO6A1;PNMT;PLA2G6;EN2;GAPDH;ABCB1;SMPD1;RIPK4;NOS2;PPT1;FBXO7;ICAM1;ALDH2;CHRM4;HTR2C;NMD3;PARL;DBH;GIGYF2;STK39;DRD3;SIPA1L2;EBF3;NTRK2;HTRA2;F2;GRN;SNCG;TACR1;CX3CR1;TLR4;HNMT;GAD1;DIO2;OPN1MW;ERBB2IP;AMD1;CDKN1A;HRH3;BAD;FKBP1;IL23A;MSMB;RHEB;PPP1R1B;RAC1;RAB3IP;CNTF;GSN;RXFP2;DAK1;MAOB;VCP;ND2;HLA-E;RAB1A;NLRP1;SNCB;HSPA1A;SOD1;IL8;SDHB;SEMA5A;SCTR;TGFB2;ESR2;XRCC4;GAL;APOE;AMIGO2;AKT1;A2M;PARK10;NGF;DDIT3;GSK3B;RAB39B;TCEANC2;CYP2C9;CDX2;CCR2;CCT4;OGG1;MET;PTGS2;GLUD2;PPARG;BACE1;LTK;SLC6A2;ANXA6;IL6;IRS1;CHM;E2F1;NRTN;MPHOSPH6;STH;TPT1;PAWR;APP;PITX3;NFE2L2;ARHGDI;SOD3;FYN;MAP2;UCP2;GAD2;HM13;IGF2;HSPD1;HSPA4;APOA1;TSPO;TPSG1;PSD;KIT;HRH1;PTN;HSD17B7;APH1B;SPP1;DRD1;ENO1;CCKBR;GABBR1;PSEN2;GABRA3;CSNK1D;TP53;PTPN11;PSMD2;3-Sep;TNF;SPR;TAF1B;NOS1;RNF41;COX1;TXN;NFKB1;FAS;CACNA1A;GLO1;SLC5A7;MAPK3;GPX1;GCLM;FAAH;PPIH;TEF;APBB1;HDAC3;SLC1A2;POLE2;PDIA2;BIN1;TP73;GRK5;SYP;ZNF512B;ND6;DYT10;DDIT4;GABARAP;MAOA;APLP2;SIRT1;CLU;TNFRSF1A;CD48;LMO1;TARDBP;NEFH;S100B;PANK2;TTR;SLC2A1;MED1;CHKB;INPP5K;CAPN10;IL10;CDK5;SCG2;ROBO1;GSTO1;PPARGC1A;JUN;VEGFA;BCL2L11;CDKN2B;ECI1;FGFR3;NR3C1;SYN1;MPO;ND1;ITLN1;CD74;C9orf3;SLC7A11;HSD17B10;HSPA14;APOBEC3H;RPLP2;COX10;KANSL1;PRB2;ADRA2C;ADH4;POU3F3;CYP2D7P1;PABPC1;MDM2;HTR2A;GPI;MYC;

	MAPK8;BAX;USP31;DRD5;MX1;GABRR3;KDR;OPRK1;HGF;PDIA3;SQSTM1;LMX1B;PORCN;KLK11;FOSB;PRDM2;CYBA;VDAC1;APEX1;HIST1H3A;CDKN2A;GH1;NEFM;PIK3CA;PPP1R9B;TMEM175;PENK;LIPA;BBS9;BCHE;CHMP2B;PLOD1;KLK6;NFASC;GRM4;PON1;ATXN8;DKK1;SLC2A9;CFP;DCLK3;C4A;TFF2;FKBP1A;MAP1LC3A;RPS6KB1;CDK5R1;NXPH3;ELAVL4;USP40;VAC14;PDE8B;ATR;CYP1A2;NOD2;SYBU;STMN1;ULK1;DRD4;PRKCD;TAC1;SLC6A4;MIR4519;POLG;S1PR1;ACE;ANXA5;SLC2A13;CHRNA3;LRP8;MAPK1;TF;GFAP;GCLC;PGLYRP1;CLRN3;CALB1;ADH1C;HTR3A;MTHFD1;RRAS2;C3orf67;AKR1B10;GSTO2;STX1B;IL1A;HMOX2;HSD3B7;CALB2;FGF1;PER1;CPNE8;PSEN1;SLC17A3;MCCC1;CD40;GSTP1;DNAJC6;PSMC4;VPS26A;ERN1;GRIN1;TRIB3;MC1R;ATXN2;ZFPM2;PDE10A;COPS5;KEAP1;CASP8;BECN1;MTIF3;HLA-DRB1;PLD2;DCTN1;VCAM1;IAPP;IL6R;SHH;IFNGR1;HSPA9;MBP;C10orf2;CD8A;POLR2A;CBS;CP;GNAS;RAB3A;PPID;TMEFF2;CHAT;ROS1;GABRB3;LYPD4;CDK2AP1;TPP1;EPHB2;SLC22A2;PRKAG2;ND5;ACO2;MPZ;CCND1;GRIN2A;APAF1;TIMP1;ATP6AP2;HIF1A;PPEF1;WNT3;LINGO2;RHD;CYLD;
Parkinsonian Disorders	LRRK2;DRD2;TH;RIT2;SLC6A3;TARDBP;COX10;RNFB32;MAPT;CD55;PARK2;SCN9A;SNCA;GPR162;PDYN;IGKV2D-29;PSMC5;FGF20;FOS;JUNB;VPS35;CSF1;SLC45A2;SLC32A1;POLG;UCHL1;EIF4G1;DIO2;GBA;GDNF;AQP4;PINK1;SYNM;DIO3;SYNJ1;SP1;PARK7;PDAP1;SLC18A2;GPR37;FGF2;BDNF;HTT;SNCAIP;UBR5;CYP2E1;CYP2D6;NOS3;GRINA;LINGO1;KRAS;SNCG;CNR1;GAK;GRN;KCNJ11;TREM2;POMC;NPPA;ATP13A2;GLA;UMOD;ERBB4;CCK;HMOX1;AMD1;RPH3A;GFRA1;TXN;TRNA;GRM5;ADORA2A;BCL2;BST1;AIFM1;EPO;S100A6;COMT;CCDC62;SCARB2;GCH1;PLA2G6;HSPA5;NQO1;RAB7L1;TRIT1;MTHFR;SHMT1;SLC41A1;PARK16;HLA-DRA;PANK2;AKT1;ADRA1D;COX1;UCHL3;NR4A2;CDX2;ICAM1;VDR;DNAJC13;SLC11A2;ALDH2;PPT1;GRIN2B;CHAT;GIGYF2;CHRNA4;HNMT;CERS2;CX3CR1;ABCC8;NTRK2;CHCHD2;NOS2;GAD1;COQ2;RET;GABBR1;CASP3;HRH3;HTR2C;GLRX2;RNFB41;HSPB1;IGLV2-18;CHRM4;HFE;WNT1;ABCB1;HTRA2;TUBB3;PNMT;CAST;FBXO7;ND6;ERBB2IP;BRCA2;GRIA1;CDKN1A;TSPO;CNTF;STUB1;EBF3;SOD1;IL8;RAB1A;SDHB;SEMA5A;TPPP;RIPK4;GSK3B;TGFB1;HSPA1A;NR4A1;GAP43;GLUD2;DRD3;SOD2;ESR1;DDIT3;IL6;MET;CCT4;APP;DDC;HLA-E;PTGS2;FKBP1;PSEN2;IL23A;CYP2C9;NGF;SNCB;PPP1R1B;CACNA1A;MAP2;ESR2;MPHOSPH6;GAL;RING1;PSMD4;BAD;RXFP2;DNAJC5;PAWR;SOD3;SLCO6A1;TPT1;DNM1L;MSMB;VSIG2;NRTN;HSPA4;FYN;ITGA9;NLRP1;CSNK1D;PPARG;PSD;C10orf2;DCTN1;HSPD1;OGG1;EN2;GAPDH;SMPD1;XRCC4;NOS1;SYT11;KIT;ENO1;DRD1;APOE;AMIGO2;PITX3;3-Sep;TP53;TLR4;NMD3;PARL;DBH;STK39;SIPA1L2;SPP1;GABRA3;TNF;GAD2;TACR1;DNAJC6;FAS;PTPN11;FAAH;APBB1;SLC5A7;TEF;GLO1;HS1BP3;OPN1MW;NFKB1;MAOB;POLE2;GPX1;PARP1;PDIA2;PPIH;TRPM7;TAF1B;DDIT4;ZNF512B;GCLM;DYT10;DAPK1;CLU;PSMD2;SLC1A2;POLR2E;SQSTM1;TPO;MAOA;

CA1;SYP;GABARAP;SPG11;RHEB;APLP2;SIRT1;RAC1;RAB3IP;
 CCR2;TTR;ROBO1;E2F1;BACE1;CAPN10;ANXA6;NEFH;TNFRS
 F1A;HSD17B7;GSTO1;PPEF1;VCP;ND2;MED1;GSTT1;PRNP;SC
 G2;RAB39B;TCEANC2;EN1;CDK5;BCL2L11;JUN;APH1B;SLC2A
 1;CD74;NR3C1;STH;SYBU;A2M;PARK10;GRK5;S100B;HSD17B1
 0;BIN1;IGF2;C9orf3;GABRB3;RPLP2;NFE2L2;POU3F3;LTK;CCK
 BR;SLC6A2;IL10;IRS1;ADH4;HSPA14;APOA1;VEGFA;IGHD2-
 15;HGF;CDKN2B;CYP2D7P1;MDM2;HDAC3;ARHGDIB;MX1;M
 PO;PRB2;UCP2;ATXN2;PABPC1;ATP7B;HM13;BAX;USP31;HTR
 1D;KLK11;PDIA3;GNAS;HRH1;PTN;GFAP;LAMP3;STX6;APEX1
 ;FGFR3;CHMP2B;CDKN2A;KANSL1;SPR;KDR;INPP5K;PPARGC
 1A;SYN1;GABRR3;BCL10;MAPK3;PENK;BRCA1;DKK1;PIK3CA
 ;PLOD1;SLC20A2;ATP6AP2;MAPK8;CHM;DCLK3;PON1;ATXN8
 ;NEFM;ELAVL4;PPP1R9B;CFP;PDE8B;VAC14;CYP1A2;NOD2;G
 CLC;TRA2B;HIST1H3A;USP40;SLC6A4;MIR4519;ACE;SLC2A9;
 TF;CD48;KLK6;LRP8;DRD4;PRKCD;ADH1C;MTHFD1;SLC2A13
 ;CHRNA3;ITLN1;AKR1B10;C4A;PGLYRP1;CLRN3;CALB1;RRA
 S2;PON2;HTR3A;CDK5R1;GH1;GSTO2;STX1B;FBXO42;PER1;S
 LC17A3;MCCC1;GSTP1;ADRA2C;S1PR1;MYOC;TRIB3;ZFPM2;
 MC1R;IL1A;HMOX2;HSD3B7;POLR2A;None;CD40;ABCC9;BBS
 9;PORCN;COPS5;CPNE8;PSEN1;KMO;TAC1;KEAP1;OPRK1;ND
 1;SI;LTF;NFASC;BECN1;PSMC4;FKBP1A;CSNK2A2;SLC7A11;T
 PP1;MAP1LC3A;RPS6KB1;HIST1H1B;MYC;MTIF3;APOBEC3H;
 HLA-
 DRB1;VCAM1;ATR;IL6R;FGF1;PLD2;AR;IFNGR1;HTR2A;ANX
 A5;PRKRA;4-
 Sep;DRD5;LMX1B;IAPP;CHRM1;EPHB2;TMEM175;TMEFF2;PPI
 D;CD8A;LRRK1;AAAS;PRDM2;CYBA;VDAC1;GRIN1;CASP8;C
 BS;TIMP1;CP;RAB3A;MAPK1;MPZ;STMN1;GRIN2A;ROS1;HIF1
 A;C3orf67;IGFBP1;WNT3;RHD;AVP;CYLD;GRM4;YWHAQ;LIN
 GO2;VPS26A;ERN1;CHRNA5;SHH;TFF2;HIST1H1A;NXPH3;AC
 SM3;PRKAA1;GCDH;PDE10A;ULK1;CRH;FMR1;OGDH;BCHE;I
 GBP1;APAF1;IFNG;DLD;TUBB4A;IL1B;PHACTR2;FUS;G6PD;L
 YPD4;CALB2;CYBB;F2;HSPA9;ACO2;DLG4;SYNE1;STXBP1;SL
 C24A6;POLE4;ATM;GABRA6;PRDX2;SREBF1;KCNS1;MMRN1;
 PTENP1;NES;GLUD1;AGTR1;HBEGF;RLS;CRYAB;CDNF;PHF1;
 MTX1;NDUFV2;GPI;HDLBP;MAP3K5;SYN3;INS;SLC22A2;MTR
 ;GNAL;TGM2;ND3;CCL2;LRP1;CGA;ATP1A3;CTRL;CKB;CCL4;
 SH3TC2;SPINK1;GSN;TOR1A;MIR410;IL18;ABP1;MBP;IL17A;G
 NE;TET1;GATA2;MCF2L;USP24;NDUFV3;TRPV6;PRRT2;HTR2B
 ;AGER;CXCL12;TAT;TRIM26;MMP9;NUB1;ASIP;IFI44;HSP90AA
 1;CTSD;KCNJ6;CDK2AP1;CYCS;TST;PTPRA;MIR433;PML;RNY
 3;FRMD6;TGM1;FTL;AFM;FADD;FMO3;CCND1;LMOD1;SGCA;
 TPSG1;PLA2G7;GPR50;XDH;GRM2;FCGR2A;LMX1A;CAMK2G;
 MAP3K1;NAT2;WFS1;ENO2;MAP2K1;PCBD1;CHRNA7;VIM;GG
 T1;SCTR;TNFRSF25;TGFB2;BAG5;TYR;PACRG;UTS2R;HLA-
 C;ASAH1;IL2RA;SIAH1;DUOX2;PRKAR1B;NT3;RFX4;CHKB;S
 MN1;IGKV1-
 16;CNR2;GSTM5;TFAM;TDO2;PDXP;KYNU;PLK1;EIF2AK2;HT
 R4;AMPD1;OPA1;PAM;SLC18A1;NDUFA1;IL12B;C9orf72;F2R;PI
 CALM;QSER1;LAMP2;TRAPPC4;SUMO1;ATG5;DISC1;BSCL2;N

EFL;HDAC1;NAGLU;CHRNA3;PIK3CB;KLK3;CA2;DNM2;CD22;
TG;NR1I2;CASP9;CDKN1B;CYP11B2;HOMER1;BAG3;DPP7;ML
C1;CDK5R2;GPT;PADI4;WNT5A;ARHGEF7;ANG;PTEN;SYVN1;
CRYZL1;MAT1A;LAMC2;PSPN;ATP5E;GRIK1;CLPB;OPCML;AB
HD5;TECR;SIRT2;HDAC6;CAMK2A;VIP;IREB2;EDNRA;CTH;FA
M215A;LMNA;GC;TRPC4;PREP;SCFV;UBE2S;PLK2;TLR2;SLC4
0A1;LTA;CALY;GPR182;RLN1;NISCH;IGF1;TP73;TRPV1;RAET1
E;DRG1;IGHV@;HTR1A;CPS1;FOXA2;FRA6E;GSTM1;HDAC9;E
CI1;RGS9;CACNA1G;RREB1;DNMT;NGFR;SSTR1;MAP2K4;EXO
SC10;ID2;MFN1;MCAT;TIPRL;GABRA1;ELANE;RNASE2;USP14
;RNF19A;GPX3;HTR7;PIK3R1;ATXN3;RHO;FBXL5;PLXNB1;PL
A2G2A;REST;IL12A;EIF2S1;PRX;TAP1;SLURP1;ALLC;SERPINA
3;APC;PLEKHM1;KCNJ4;AFP;SLC17A7;MMP3;TOR1B;LIPA;VG
F;RGN;FOSB;ATP8A2;NDUFB3;RBX1;ITGAM;SNAPC1;IL2;SLC
25A26;DNMT3B;SAT1;CSF2;KCNJ14;ADRA2A;NRG1;COX5A;C
YP1A1;EP300;SCN8A;DBI;CD40LG;FGFR1;FOXC2;THBD;SHBG
;LDLR;TGOLN2;CREB1;HPD;RAB11FIP3;ATP6V0A2;MAPK14;S
LC5A3;PARK3;FMN1;HRAS;PTH;BMP7;CHGA;CNDP2;HMGCR;
MUTYH;NNMT;NEUROG2;FTMT;ACO1;TDP2;HSPA4L;EEF1A1;
CRABP1;CRP;EGR1;S100A8;GFRA2;CASP12;BCL2A1;PAH;SGK
1;PDK2;ATG7;CD2;THAP1;ZFPM1;WAPAL;PKD1;APOB;SGSM3;
MTOR;CX3CL1;HRK;RAB38;OPRM1;MAMLD1;HOXD13;ACTB
L2;CYP46A1;GMCL1P1;HAT1;CYP2B6;FANCA;FOXO3;PDSS1;A
CLY;SMAD1;CST3;CAV1;BCL2L1;XPR1;PRSS21;LPO;ALB;HSPB
P1;PLA2G4A;TPH1;NOL3;ST13;REG1P;IL4;CASP1;P4HB;SDPR;
HYOU1;ALDH1A1;ALCAM;CASP8AP2;ANTXRL;C4B;NPY;GIP;
ATF6B;PEMT;AGXT;PPIA;PGR;PTPRU;CYP2C19;PDC;IGHM;IL1
RN;ROCK1;GYPA;PAX6;RIMS4;CSPG4;PSG5;STSP1;GRIA2;MR
GPRX3;PLCG1;PCDHA6;SIGLEC1;PI4KA;CSF2RB;FASLG;OPRL
1;POR;MFGE8;DAOA;ADA;AZGP1;CD1D;CRYAA;SDTY1;ABCB
6;HIST4H4;NTS;SHC2;GYPE;HNRNPM;RLN2;F11R;SLC10A3;SI
RT3;GHRL;DYRK1B;LGALS1;SOCS3;CACNA1D;LPAR5;CCS;AP
OC2;SORL1;RRS1;GSTK1;TRH;CUX1;PIN1;MB21D1;AGTR2;AG
T;ASCL1;ACT;KCNN3;CALR;APRT;HLF;YWHAH;NTSR1;SERPI
NA1;LGALS3BP;STAT5A;MANF;HSD11B1;LSAMP;NA;AGO2;L
AMTOR2;CTSL1;CFD;PTBP3;CCDC6;PTGER1;EBPL;TBP;ATP6
V0A4;OPTN;COL4A3BP;LRP5;GRM3;TUSC3;BHLHE23;HMGB1;
UBB;AGFG1;SIGMAR1;CA9;NHLH1;RNH1;EIF2AK3;ETS1;IKB
KE;NCAM1;NTRK1;IFI30;LALBA;ADAM2;ANTXR2;CHRM2;TY
RP1;LAG5;CD69;SS18;NTF3;EPGN;CD200;ECH1;SEPP1;IMPA1;P
OMT1;TPTE2;ELL;ACAT1;BLVRB;ODC1;NCOA6;USP37;GHRH;
PNOC;PRL;PIN1P1;NEDD8;HSPG2;CYP3A4;GRID2;KLF16;FX
YD1;DOCK10;SLC8A3;PROZ;RENBP;IGFBP3;DBNL;NR3C2;PPIG;
NT5E;ADORA1;CYP3A;STAT3;RHOA;ITIH4;PDE7A;DBP;CPZ;C
OMP;APEH;CD14;MMP1;BRAF;SYNGR2;GGCX;CTNNB1;NDU
FS1;MGAM;IL17F;COL1A1;ALKBH1;SULT2A1;RP1;B2M;KRT8;
PPP1R12A;CAD;FRAXA;RELN;NTF4;SULT1A3;ELK3;PRM1;PX
N;SLC6A14;TFRC;ATP2A2;IRF6;ITGA2;MF12;SOX1;PNPT1;NRM
;ST8;INSRR;SF3B4;FCGR1A;PCYT1A;DMRT1;ADCY10;CCBP2;
ALOX5;ST7-OT4;SULT1A1;HIST3H3;ARG1;CYP2C18;EP DBS;

Table S2 Co-existed genes in 3 PD-related gene sets

Set	Gene
“Parkinson Disease”& “Parkinson Disease, Secondary” & “Parkinsonian Disorders”	VPS35;MAPT;GLA;PLA2G6;VPS26A;DNAJC13;SYNJ1;FBXO7;PSEN2;CACNA1A;PANK2;PARK7;GABRR3;DCTN1;SNCA;CHCHD2;LRRK2;TPP1;SQSTM1;PPEF1;PINK1;PDYN;TARDBP;SPR;AIFM1;PARP1;DRD2;CASP3;PARK2;POMC;SNCAIP;ALDH2;CP;POLG;SOD1;COQ2;DDC;MAOB;PPT1;BCL2;SLC6A3;SIRT1;TPSG1;TP53;TH