

Table S2: List of novel metabolic genes identified in the Substantia nigra that had not been previously characterised in Parkinson's disease.

Gene ID	Gene Name	Enzyme	Protein Family	OMIM ID	Uniprot ID	Ontology	PMID	Genomic Location	RefSeq_MRNA
ANXA3	annexin A3		PF00191	106490	P12429	GO:0005509	1830024	4q21.21	NM_005139
B3GAT1	beta-1,3-glucuronyltransferase 1	2.4.1.135	PF03360	151290	Q9P2W7	GO:0000139	8619474	11q25	NM_054025, NM_001367973, NM_018644
CAD	carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase	3.5.2.3	PF02787	114010	F8VPD4	GO:0001889	1979741	2p23.3	NM_004341, NM_001306079
GK	glycerol kinase	2.7.1.30	PF00370	300474	B4DH54	GO:0004370	2081587	Xp21.2	NM_001128127, NM_203391, NM_001205019, NM_000167
GLTP	glycolipid transfer protein		PF08718	608949	A0A024RB17	GO:0005515	2190982	12q24.11	NM_016433
GNE	glucosamine (UDP-N-acetyl)-2-epimerase/N-acetylmannosamine kinase	2.7.1.60	PF00480	269921	Q9Y223	GO:0004553	2443758	9p13.3	NM_001128227, NM_001190384, NM_001190388, NM_001374797, NM_005476, NM_001190383, NM_001374798
GUCY1B1	guanylate cyclase 1 soluble subunit beta 1	4.6.1.2	PF07700	139397	Q02153	GO:0004383	1352257	4q32.1	NM_001291954, NM_001291952, NM_001291951, NM_001291955, NM_001291953, NM_000857
MAP4K2	mitogen-activated protein kinase kinase kinase kinase 2	2.7.11.1	PF00069	603166	Q12851	GO:0000139	7477268	11q13.1	NM_001307990, NM_004579
PLOD3	procollagen-lysine,2-oxoglutarate 5-dioxygenase 3	2.4.1.66	PF03171	603066	O60568	GO:0001701	9582318	7q22.1	NM_001084
PLPP2	phospholipid phosphatase 2	3.1.3.4	PF01569	607126	O43688	GO:0005515	8889548	19p13.3	NM_177543, NM_003712, NM_177526
TM7SF2	transmembrane 7 superfamily member 2	1.3.1.70	PF01222	603414	O76062	GO:0005515	9286704	11q13.1	NM_001277233, NM_003273