

## SUPPLEMENTARY TABLES

**Supplementary Table 1. Information on the human brain transcriptome datasets of AD, PD and HD.<sup>1</sup>**

GEO ID	Samples	Brain region	Platform	Mean PMI
GSE5281 (AD)	87 cases 74 controls	Entorhinal cortex	Affymetrix Human Genome U133 Plus 2.0 Array	All: 2.5 h
		Hippocampus		
GSE20295 (PD)	40 cases 53 controls	Medial temporal gyrus	Affymetrix Human Genome U133A Array	Case: 14.0 h Control: 17.1 h
		Posterior cingulate		
		Superior frontal gyrus		
		Primary visual cortex		
GSE3790 (HD)	114 cases 87 controls	Prefrontal cortex	Affymetrix Human Genome U133A Array	No information
		Putamen		
		Substantia nigra		
		Caudate nucleus		
		Cerebellum		
		Frontal cortex		

<sup>1</sup>All datasets were conducted whole genome microarray expression test using postmortem brain tissues. Abbreviations: AD: Alzheimer's disease, PD: Parkinson's disease, HD: Huntington's disease, PMI: postmortem interval.

**Supplementary Table 2. Information on the human blood transcriptome datasets of AD, PD and HD.**

GEO ID	Samples	Tissue	Platform
<i>Experimental dataset</i>			
GSE63060 (AD)	145 cases 104 controls	Blood	Illumina HumanHT-12 V3.0 expression beadchip
GSE99039 (PD)	205 cases 233 controls	Blood	Affymetrix Human Genome U133 Plus 2.0 Array
GSE51799 (HD)	91 cases 33 controls	Blood	Illumina Genome Analyzer IIx (Homo sapiens) Illumina HiSeq 2000 (Homo sapiens)
<i>Validation dataset</i>			
GSE63061 (AD)	140 cases 134 controls	Blood	Illumina HumanHT-12 V4.0 expression beadchip
GSE57475 (PD)	93 cases 49 controls	Blood	Illumina HumanHT-12 V3.0 expression beadchip
GSE1751 (HD)	12 cases 14 controls	Blood	Affymetrix Human Genome U133A Array

Abbreviations: AD: Alzheimer's disease, PD: Parkinson's disease, HD: Huntington's disease.

**Supplementary Table 4. Information on the mouse brain transcriptome datasets of AD, PD and HD.**

GEO ID	Samples	Brain region	Platform	Animal model
GSE14499 (AD)	16 cases 10 controls	Entorhinal cortex	Affymetrix Mouse Genome 430 2.0 Array	APP transgenic mice
		Hippocampus		
GSE7707 (PD)	9 cases 9 controls	Frontal cortex	Affymetrix Mouse Genome 430 2.0 Array	MPTP-treated mice
		Midbrain		
		Striatum		
GSE9038 (HD)	12 cases 12 controls	Cerebellum	Affymetrix Mouse Genome 430 2.0 Array	Hdh CAG knock-in mice
		Striatum		

Abbreviations: AD: Alzheimer's disease, PD: Parkinson's disease, HD: Huntington's disease.