

**Table S1.** Overview of the PD case-control *post-mortem* brain samples analyzed in this study

	PD cases	PD controls
<b>Total number</b>	214	47
<b>Sex</b>		
Number of males (%)	144 (67.3%)	26 (55.3%)
p-value <sup>a</sup>	0.145	
<b>Age at death (years)</b>		
average (±SD)	78.8 (6.7)	81.1 (9.7)
median (IQR)	79 (75-84)	83 (75.5-89)
range	57-93	58-96
p-value <sup>b</sup>	0.137	
<b>Age at onset (years)<sup>c</sup></b>		
average (±SD)	65.6 (10.2)	n.a.
median (IQR)	67 (59-72)	n.a.
range	30-88	n.a.
<b>Disease duration (years)<sup>c</sup></b>		
average (±SD)	13.0 (7.3)	n.a.
median (IQR)	11 (8-17)	n.a.
range	1-44	n.a.
<b>PMI (hours)</b>		
average (±SD)	19.4 (9.5)	21.1 (9.7)
median (IQR)	19 (12-24)	21 (13.5-24.75)
range	2-48	5-48
p-value <sup>b</sup>	0.302	
<b>RIN value</b>		
average (±SD)	3.7 (1.4)	3.6 (1.4)
median (IQR)	3.05 (2.5-4.68)	2.8 (2.4-4.8)
range	2.2-7.5	2.3-7.6
p-value <sup>b, d</sup>	0.629	
<b>RNA A260/280</b>		
average (±SD)	1.94 (0.03)	1.95 (0.05)
median (IQR)	1.94 (1.92-1.95)	1.94 (1.93-1.96)
range	1.87-2.06	1.89-2.20
p-value <sup>b</sup>	0.130	
<b>Alpha-synuclein Braak stage<sup>e</sup></b>		
Stage 3	15 (7.0%)	n.a.
Stage 4	21 (9.8%)	n.a.
Stage 5	46 (21.5%)	n.a.
Stage 6	120 (56.1%)	n.a.
Data unavailable	12 (5.6%)	n.a.
<b>Tau Braak stage<sup>f</sup></b>		
Stage 0	9 (4.2%)	n.a.
Stage 1	35 (16.5%)	n.a.
Stage 2	146 (68.2%)	n.a.
Stage 3	20 (9.3%)	n.a.
Stage 5	2 (0.9%)	n.a.
Data unavailable	2 (0.9%)	n.a.

**Legend.** *Post-mortem* brain samples from the supratemporal gyrus of Parkinson's (PD) patients and corresponding controls were provided by the Parkinson's UK Brain Bank at Imperial College London. SD = standard deviation; IQR = interquartile range; PMI = *post-mortem* interval; RIN = RNA integrity number; <sup>a</sup> = Pearson's Chi-squared test with Yates' continuity correction; <sup>b</sup> = Welch's two-sample

t-test; <sup>c</sup> = data available for 155 individuals; <sup>d</sup> = due to some deviation from normality, we also performed Wilcoxon rank sum test, but results did not change substantially, thus only the results of Welch's two-sample t-test are provided here; <sup>e</sup> = data available for 202 individuals; <sup>f</sup> = data available for 212 individuals; n.a. = not applicable/not available.