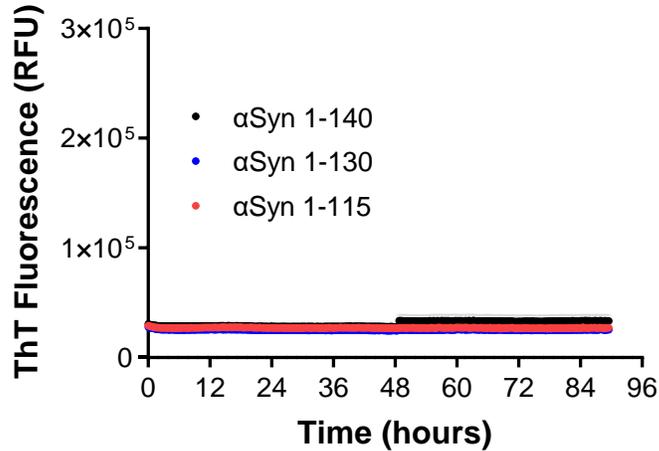


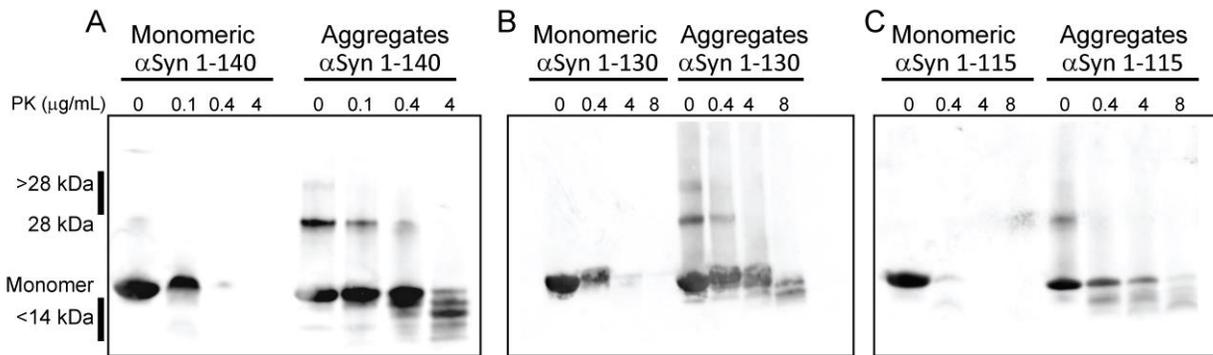
**Supplementary Table.** Clinical characteristics of the PD, DLB and healthy control cases used in the study

Case ID	Diagnosis	Age	Sex	PMI (h)	Tissue pH	Braak NFT	Braak LB
C1	Control	89	F	24	N.D.	2	1
C2	Control	75	M	20	N.D.	0	0
C3	Control	69	F	16	N.D.	1	0
C4	Control	72	F	28	6.86	1	0
C5	Control	65	M	14	N.D.	1	0
C6	Control	72	M	17	6.13	1	0
C7	Control	87	M	8	5.69	2	0
C8	Control	87	F	14	6.63	4	N.D.
P1	PD	74	F	16	6.08	N.D.	N.D.
P2	PD	84	M	38	N.D.	N.D.	N.D.
P3	PD	68	M	18	N.D.	0	N.D.
P4	PD	67	F	38	N.D.	0	N.D.
P5	PD	78	M	24	N.D.	0	5
P6	PD	69	M	35	N.D.	0	4
P7	PD	82	M	7	5.91	2	5
P8	PD	64	M	33	N.D.	0	5
D1	DLB	88	M	4	N.D.	2	6
D2	DLB	77	M	8	N.D.	2	6
D3	DLB	79	M	26	6.66	2	5
D4	DLB	77	F	23	6.24	4	6
D5	DLB	72	M	18	6.29	3	6
D6	DLB	85	F	18	N.D.	4	6
D7	DLB	79	F	29	5.75	3	6
D8	DLB	75	M	18	6.45	2	5

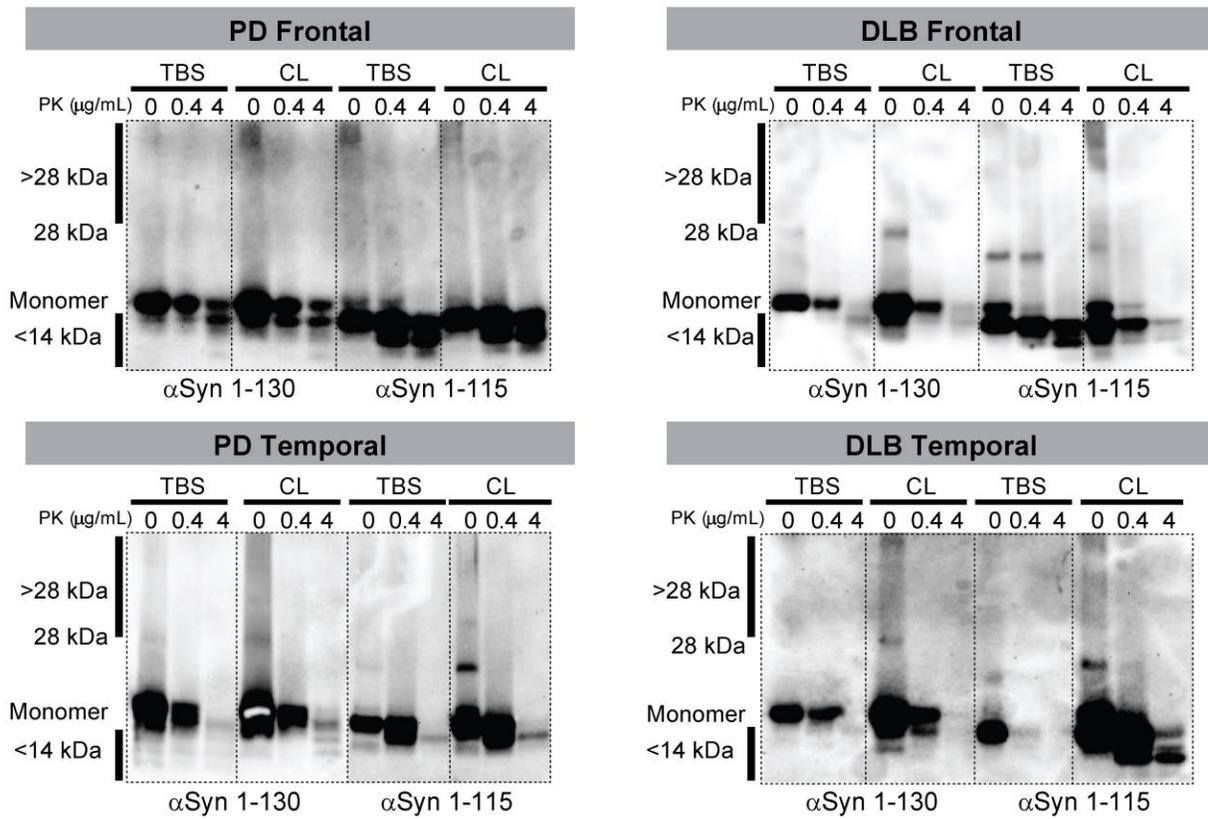
Abbreviations. **PMI (h)**: post mortem interval in hours; **Braak NFT**: Braak neurofibrillary tangle staging; **Braak LB**: Braak Lewy bodies staging



**Figure S1:** Unseeded RT-QuIC reactions. RT-QuIC assay using recombinant full-length  $\alpha$ Syn (1-140) or each of the two C-terminally truncated forms (1-130 and 1-115) alone; i.e. unseeded reactions. Data shown is the average ThT fluorescence over time ( $n = 3, \pm$  SEM).



**Figure S2.** PK digestion of recombinant  $\alpha$ Syn forms in the pure form (monomeric) and after *in vitro* aggregation of the recombinant  $\alpha$ Syn (aggregates). Full length  $\alpha$ Syn 1-140 and C-terminally truncated  $\alpha$ Syn (1-130 and 1-115) were aggregated *in vitro*. Aggregation was carried out using 1 mg/mL solution of recombinant proteins in PBS by incubation at 37°C for 7 days with constant shaking at 800 rpm. Aggregates were collected by centrifugation at 14'000 rpm for 15 min at 4°C, then pellets were washed twice with 500  $\mu$ L PBS and centrifugation 14'000 rpm for 15 min at 4°C. The final pellets were resuspended in 300  $\mu$ L of PBS. The concentration of the samples was determined by BCA assay and stored at -80°C. Monomeric  $\alpha$ Syn and aggregates prepared from  $\alpha$ Syn 1-140 (A),  $\alpha$ Syn 1-130 (B) and (C)  $\alpha$ Syn 1-115 were incubated at 37°C with increasing concentrations of PK for 30 minutes before immunoblotting with Syn-1 antibody.



**Figure S3.** High exposure of blots in Figure 4 and Figure 5 for the PK digestion of RT-QuIC end products from the frontal (top) and temporal (bottom) cortices of PD and DLB cases.