

Supplemental Legends

- Suppl Fig.1 Cortical α -synuclein neuronal pathology in atypical MSA. Numerous neuronal inclusions of various shapes in the superficial (a) and deep (b) layers of the frontal cortex. In set in (b) shows a Pick-body like inclusion. Case 3. α -synuclein immunohistochemistry. Scale bars: 50um.
- Supp Fig. 2 Double immunohistochemistry shows the co-localization of α -synuclein (brown) and tau (blue) in a subset of Pick body-like (a) and neurofibrillary tangle-like inclusions (b). Case 4, hippocampal dentate fascia (a). Case 1, subiculum (b). Scale bars: a; 20um, b; 50um.
- Suppl Fig. 3 Electron micrograph of amyloid plaque (Amy) and adjacent unmyelinated dystrophic neurites (arrows) (a). Enlargement of * in A shows the α -synuclein-labeled granule-coated filaments in the neurite, but not amyloid fibrils. Arrows point to some gold particles (b). Case 1, amygdala. Scale bars: a; 1 μ m, b; 100 nm.
- Supplemental Fig. 4 Electron micrographs of co-existing synuclein and tau filaments in the same neuron. Boxed areas are enlarged in sequence (a-c). Synuclein labelings (arrows point to gold particles) of granule-coated filaments, but not straight filaments (c). Enlargement of area to the right of (c) shows a single paired helical filaments with 80 nm periodicities (arrows) among

many straight filaments (d). Case 1, subiculum. N, nucleus. Scale bars:
a; 1 μm , b; 0.5 μm , c; 0.1 μm , d; 50 nm.







