

Supplementary Data

Synaptic phosphorylated α -synuclein in dementia with Lewy bodies

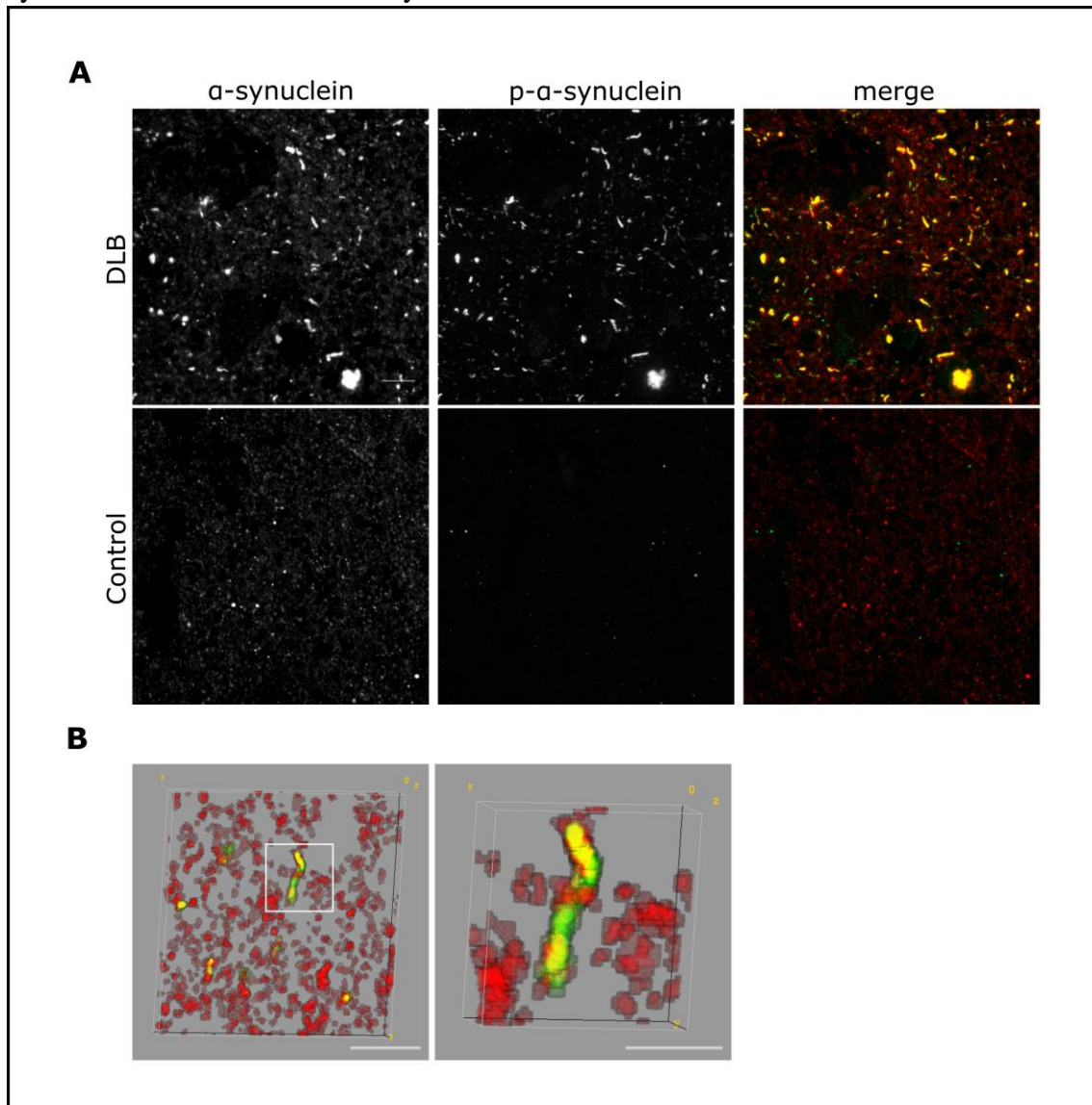
Martí Colom-Cadena, Jordi Pegueroles, Abigail G. Herrmann, Christopher M. Henstridge, Laia Muñoz, Marta Querol-Vilaseca, Carla San Martin, Joan Luque-Cabecerans, Jordi Clarimon, Olivia Belbin, Raúl Núñez-Llaves, Rafael Blesa, Colin Smith, Chris-Anne McKenzie, Matthew P. Frosch, Allyson Roe, Juan Fortea, Jordi Andilla, Pablo Loza-Alvarez, Ellen Gelpi, Bradley T. Hyman, Tara L. Spires-Jones, Alberto Lleó

Supplementary Table 1. The Medical Research Council (MRC) Edinburgh Brain & Tissue Bank cases.

Case	BNN Number
SD063/13	19686
SD024/15	26495
SD056/14	24527
SD005/16	28410
SD010/16	28771

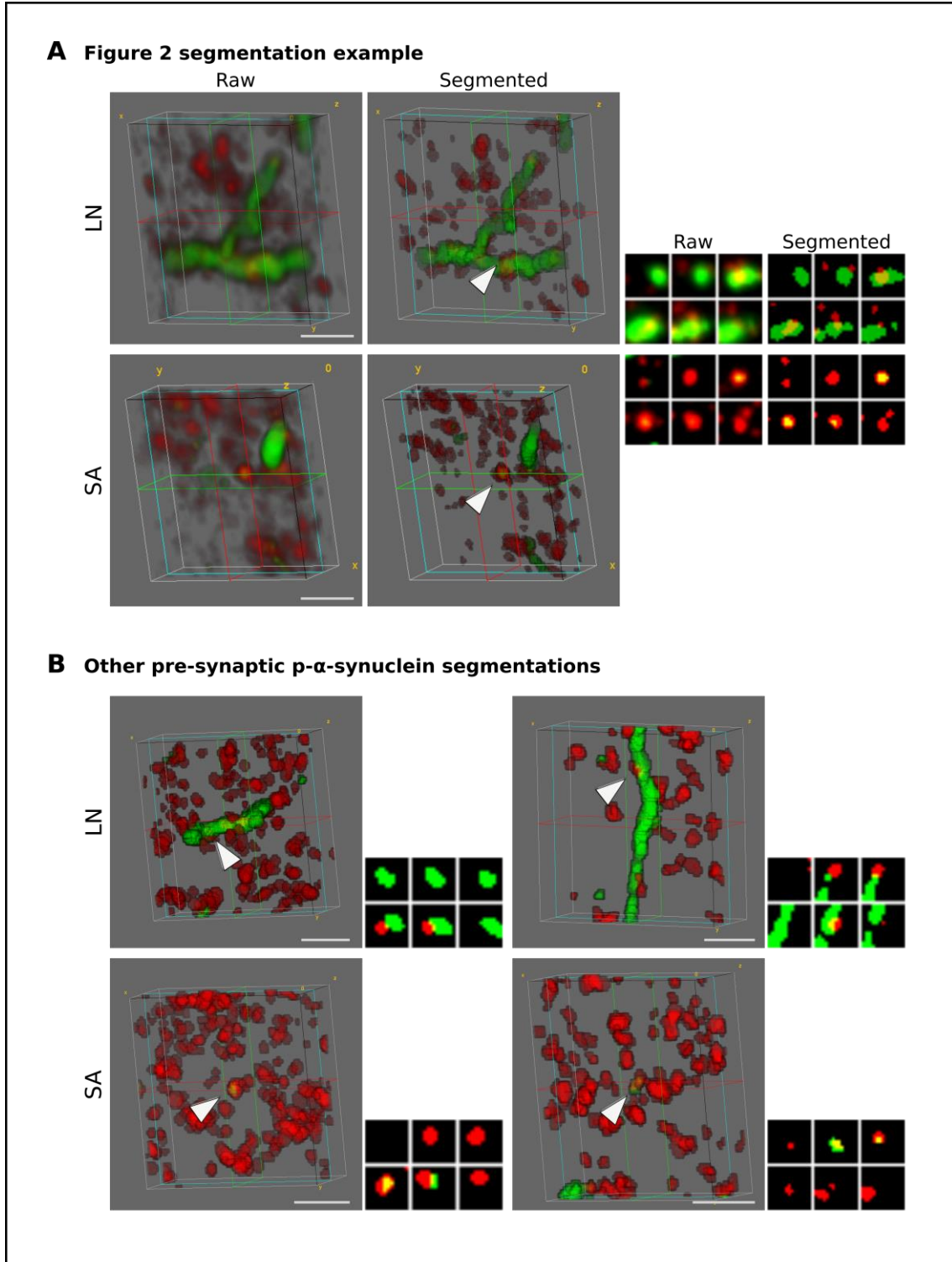
MRC numbers and associated BNN numbers.

Supplementary Figure 1. Distribution of non-phosphorylated and phosphorylated α -synuclein in dementia with Lewy bodies and controls.



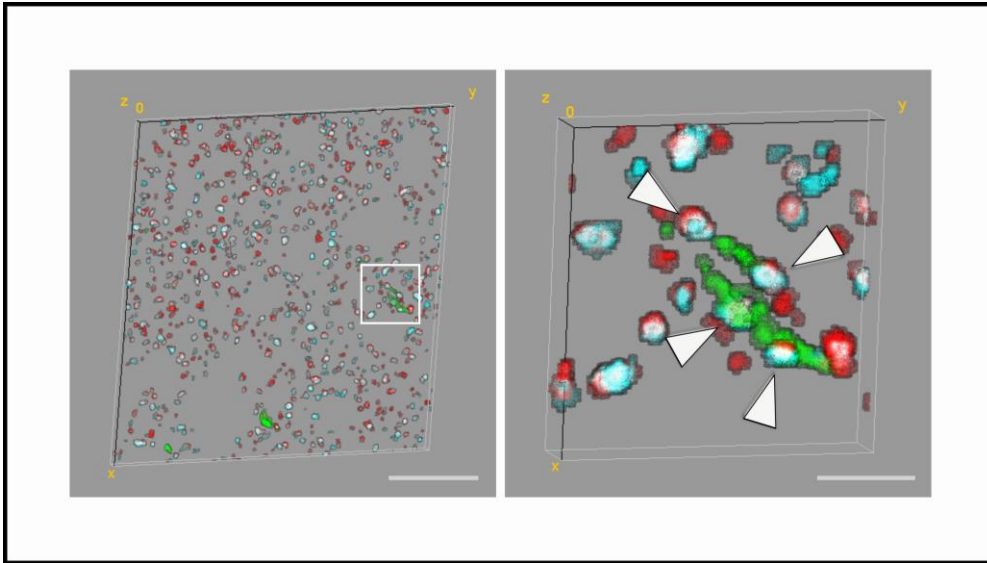
A Representative images of brain sections of a case with dementia with Lewy bodies and a control case stained with antibodies against non-phosphorylated α -synuclein (red) and p- α -synuclein (green). Each image is a maximum intensity projection of 20 consecutive sections. **B** Three dimensional representation of non-phosphorylated alpha-synuclein (red) and p- α -synuclein (green) aggregates found in DLB cases. An inset of the low magnification image is shown on the right. Abbreviations: DLB, dementia with Lewy bodies. Scale bar in A, 10 μ m; in B, 5 μ m (left) and 2 μ m (right).

Supplementary Figure 2. Segmentation and co-localization examples.



A Three dimensional representations of the images shown in Figure 2 as well as synaptograms representing six 70nm consecutive sections (from left to right and top to bottom) of a Lewy neurite (LN) or a small aggregate (SA) (green) colocalizing with synaptophysin (red) pointed by the arrowheads. Both the raw and segmented images are shown. **B** 3D examples of other segmented Lewy neurites and small aggregates. Synaptograms on the bottom-right represent a magnification of the pointed area. Abbreviations: LN, Lewy neurite; SA, Small aggregate. Scale bars in A and B, 2 μ m.

Supplementary Figure 3. Pre-synaptic localization of p- α -synuclein and synapsin I in DLB.



A Three dimensional reconstruction of 20 consecutive sections from a DLB case. P- α -synuclein (green), synaptophysin (red) and synapsin I (blue) are shown. An inset of the low magnification image is shown on the right. Arrowheads indicate objects with co-localization of all three markers. Scale bars 10 μ m (left) and 2 μ m (right).