SUPPLEMENTARY FIGURE 4

High plasticity of axonal pathology in Alzheimer's disease mouse models

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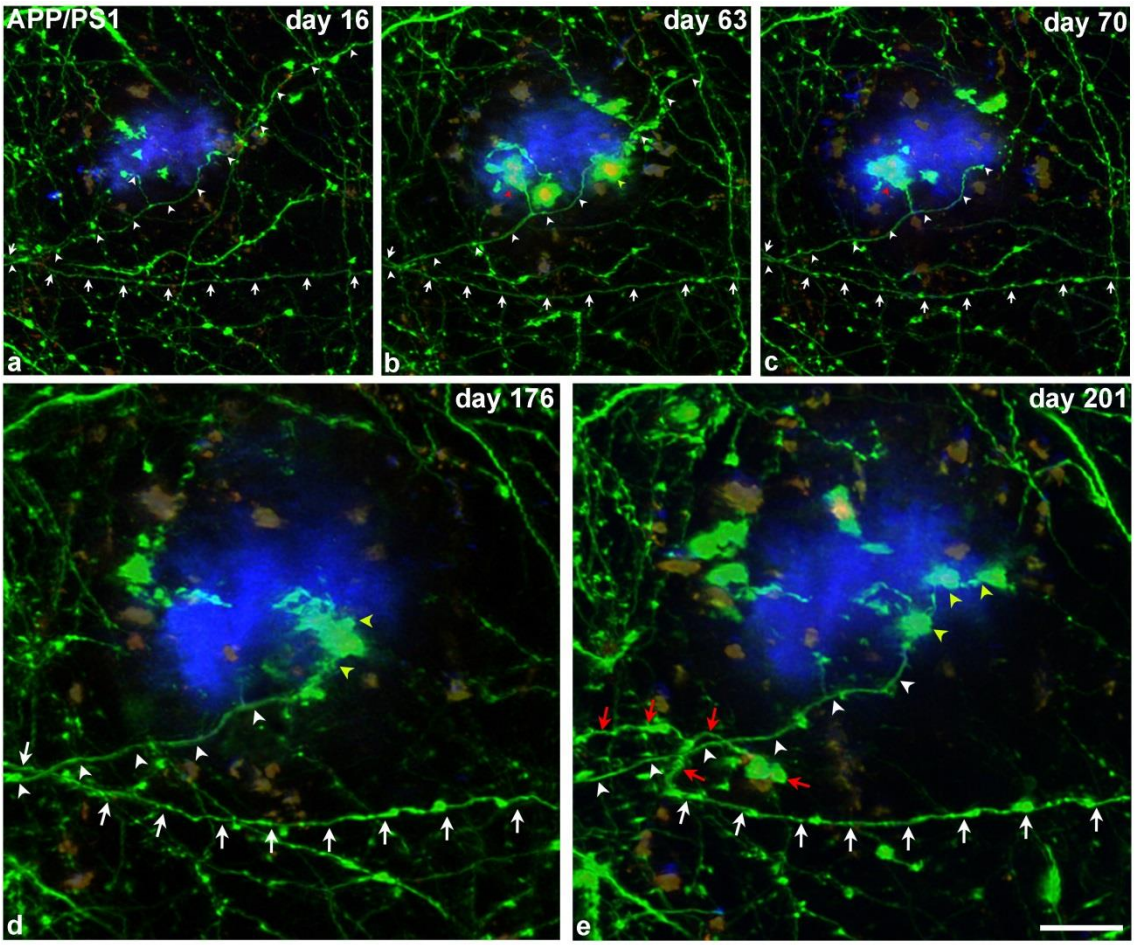

Supplementary Fig. 4 Re-formation of AxDs and sprouting phenomenon (re-growth) in the APP-PS1 mouse. (**a–e**), Maximum projection of a stack of images (40 images; z-step: 1 μm) taken with the two-photon microscope in the supragranular layers of the somatosensory cortex of the APP-PS1 mouse at five different time points showing some neurites expressing GFP around an Aβ plaque stained with Methoxy-X04 (blue). There are two axons of interest, one is marked with arrowheads (axon 1) and the other with arrows (axon 2). Axon 1: At the beginning, axon 1 looks normal (**a**). Days later, the middle part of the axon becomes dystrophic (yellow arrowhead – dys 2a), as does a short branch (red arrowhead – dys 1). Moreover, a distal portion of axon 1 disappears and so the axon as a whole is shortened (**b**). One week later, the AxD in the middle part has disappeared and axon 1 is cut at this point (**c**). Days later, the AxD at the short branch (dys 1) has disappeared and another AxD (dys 2b) appears at the edge of axon 1 where dys 2a was previously present (**d**). The morphology of this AxD changes over time (**e**). Axon 2: At the beginning, axon 2 looks normal (**a–b**). Days later, this axon gets thicker (**c–d**) and, at some point, the axon is cut and then re-grows through the Aβ plaque. The new re-growth segment (32 μm) becomes dystrophic (**e,** red arrows). Scale bar (in **e**): 19.5 μm in **a–c;** 10.3 μm in **d–e**