

Mitochondrial accumulation and lysosomal dysfunction result in mitochondrial plaques in Alzheimer's disease

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Supplementary Table 1

Supplemental Movies legends

Supplementary Movie 1. Representative 3D images showing the spatial distribution of MPs (aggregated green) and A β plaques (pseudo red) in the cortex region of APP/PSEN1/mt-Keima mice at 50-60 wks old. Mitochondria (green) are identified by mt-Keima signal excited at 488 nm using fixed tissue.

Supplementary Movie 2. Representative 3D reconstructions showing MPs (aggregated green) either associated with A β plaques (pseudo-red, 7-16 s) or independent of A β (30-35 s), as well as A β plaques without MPs (20-29 s), in the cortical region of APP/PSEN1/mt-Keima mice aged 50–60 weeks. Mitochondria (green) are identified by mt-Keima signal excited at 488 nm using fixed tissue.

Supplementary Movie 3. Representative 3D reconstructions showing MPs (aggregated green) either associated with A β plaques (red, 6-14 s) or independent of A β (22-32 s), as well as A β plaques without MPs (16-20 s), in the hippocampal region of human AD brains. Mitochondria (green) were visualized by VDAC1 immunostaining.

Supplementary Movie 4. Representative 3D fluorescence images showing cell nucleus (blue), MPs and mitochondria in the cortex region of APP/PSEN1/mt-Keima mice at 50-60 weeks old. Mitochondria (green) are detected by mt-Keima signal excited at 488 nm using fixed tissue.

Supplementary Movie 5. Representative 3D images showing the spatial distribution of MPs (aggregated green) and microglia (Iba1 in pseudo red) in the cortex region of APP/PSEN1/mt-Keima mice at 50-60 wks old. Mitochondria (green) are identified by mt-Keima signal excited at 488 nm using fixed tissue.

Supplementary Movie 6. Representative 3D images showing the spatial distribution of MPs (aggregated green) and GFAP positive astrocytes (pseudo red) in the cortex region of APP/PSEN1/mt-Keima mice at 50-60 wks old. Mitochondria (green) are identified by mt-Keima signal excited at 488 nm using fixed tissue.

Supplementary Movie 7. Representative 3D images showing the spatial relationship between MPs (aggregated green) and lysosome-positive structures (pseudo red) in the cortex region of APP/PSEN1/mt-Keima mice at 50 wks old. Mitochondria (green) are identified by mt-Keima signal excited at 488 nm using fixed tissue.

Supplementary Table 1

The information on human AD and control individuals

Subject ID	Age	Brain Region	Preparation	PMI (hours)	Tissue Type	Subject Sex	Race	Clinical Brain Diagnosis
Control 1	66	Hippocampus	Formalin Fixed	18.21	Brain	Female	White	No clinical brain diagnosis found
Control 2	62	Hippocampus	Formalin Fixed	12.5	Brain	Male	White	No clinical brain diagnosis found
Control 3	54	Hippocampus	Formalin Fixed	19.3	Brain	Female	White	No clinical brain diagnosis found
Control 4	65	Hippocampus	Formalin Fixed	18.33	Brain	Male	White	No clinical brain diagnosis found
AD 1	68	Hippocampus	Formalin Fixed	48.15	Brain	Female	White	Alzheimer's disease with early onset; Cerebral amyloid angiopathy
AD 2	56	Hippocampus	Formalin Fixed	22.5	Brain	Female	White	Alzheimer's disease with early onset; Cerebral amyloid angiopathy
AD 3	66	Hippocampus	Formalin Fixed	30.36	Brain	Male	White	Alzheimer's disease with early onset; Cerebral amyloid angiopathy
AD 4	63	Hippocampus	Formalin Fixed	22.44	Brain	Male	White	Alzheimer's disease with early onset; Cerebral amyloid angiopathy