

PRODUCT DATA SHEET

Alpha-Synuclein (WT) Pre-formed Fibrils

SKU: TDA-1102-100

Product Details

Product Name: Alpha-Synuclein Pre-formed Fibrils

Catalog Number: TDA-1102-100

Organism: *Homo Sapiens*, Human

Nature: Recombinant

Package Size: 100ug in 1mg/ml concentration

Conjugates: No tag

Protein Length/Size: Full Length

Expression System: E. coli

Amino Acid Sequence: MDVFMKGLSK AKEGVVAAAE KTKQGVAEAA GKTKEGVLYV
GSKTKEGVVH GVATVAEKTQ EQVTNVGGAV VTGVTAVAQK TVEGAGSIAA ATGFVKKDQL
GKNEEGAPQE GILEDMPVDP DNEAYEMPSE EGYQDYPEPA

Purity: >95% by SDS-PAGE

Storage Conditions & Shipment

Storage Buffer: PBS pH 7.4

Product Format/Shipped: Cryopreserved / Dry ice

Storage Temperature: -80°C for long term storage; avoid freeze/thaw cycle

Safety Precaution

PLEASE READ BEFORE HANDLING ANY FROZEN VIALS. Please wear appropriate Personal Protection Equipment (lab coat, thermal gloves, safety goggles and a face shield) when handling

Description

Alpha-synuclein (SNCA) fibrils, also referred to as pre-formed fibrils (PFFs), represent the pathogenic aggregated form of alpha-synuclein that is central to the development of synucleinopathies. Alpha-synuclein is predominantly expressed in the brain, where it is enriched at presynaptic nerve terminals and localized to mitochondria in multiple regions, including the olfactory bulb, hippocampus, striatum, and thalamus.

Pathological alpha-synuclein fibrils constitute the principal structural component of Lewy bodies and Lewy neurites, the defining hallmarks of Parkinson's disease (PD). In PD and related disorders, intracellular accumulation of alpha-synuclein fibrils, often co-localized with ubiquitin, occurs selectively in vulnerable neuronal populations and drives progressive neurodegeneration. In addition, alpha-synuclein fibrillar aggregates have been identified as a major non-amyloid- β component of amyloid plaques in Alzheimer's disease, highlighting their broader relevance in neurodegenerative pathology.

Product Data

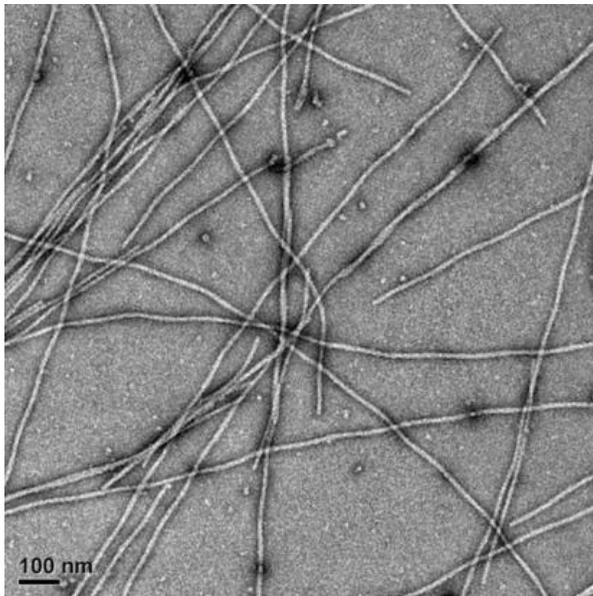


Figure 1, TEM of alpha-Synuclein (WT) Pre-formed Fibrils

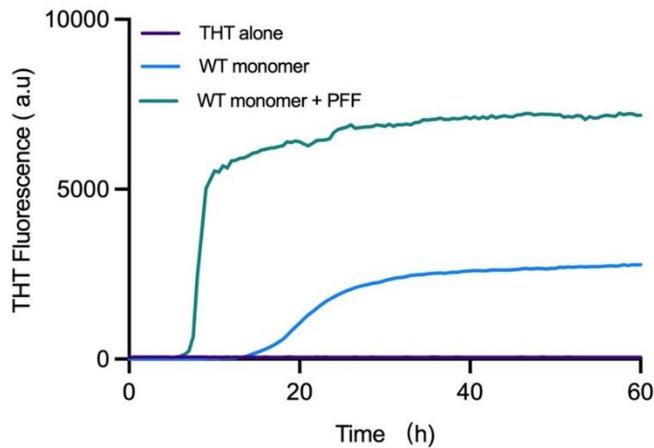


Figure 2, Thioflavin T (ThT) aggregation kinetics of wild-type (WT) α -synuclein monomer with and without preformed fibril (PFF) seeding.

Time-dependent ThT fluorescence of recombinant wild-type α -synuclein monomer alone (blue) and in the presence of preformed fibril seeds (WT monomer + PFF(5%), teal). The unseeded WT monomer shows a characteristic delayed aggregation profile with gradual fibril growth, whereas PFF seeding markedly accelerates aggregation, leading to a rapid increase in ThT fluorescence and an earlier, higher fluorescence plateau. ThT alone (purple) served as a negative control and remained at baseline fluorescence throughout the assay. Fluorescence intensity is shown in arbitrary units (a.u.).

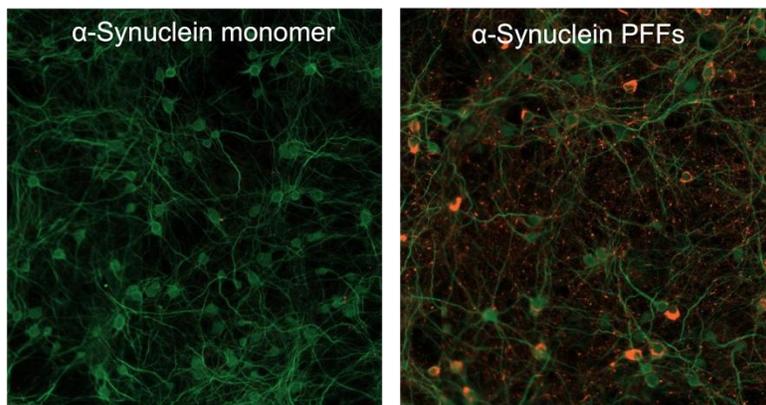


Figure 3, Differential effects of α -synuclein monomers and preformed fibrils (PFFs) on primary neurons.

Representative fluorescence images of primary neurons treated with α -synuclein monomers (left) or α -synuclein preformed fibrils (PFFs) (right). Neuronal morphology and neurites are visualized in green, while α -synuclein pathology-associated signals are shown in red. Neurons exposed to α -synuclein monomers display intact neurite networks with minimal intracellular aggregation, whereas treatment with α -synuclein PFFs induces prominent punctate and aggregate-like signals, accompanied by altered neurite integrity, consistent with seeded α -synuclein aggregation and pathology propagation.

Applications

SDS-PAGE, WB, In vivo assay, In vitro assay

Disclaimers

This product is intended for laboratory research use only. It is not intended for any animal or human therapeutic use, any human or animal consumption, or any diagnostic use.