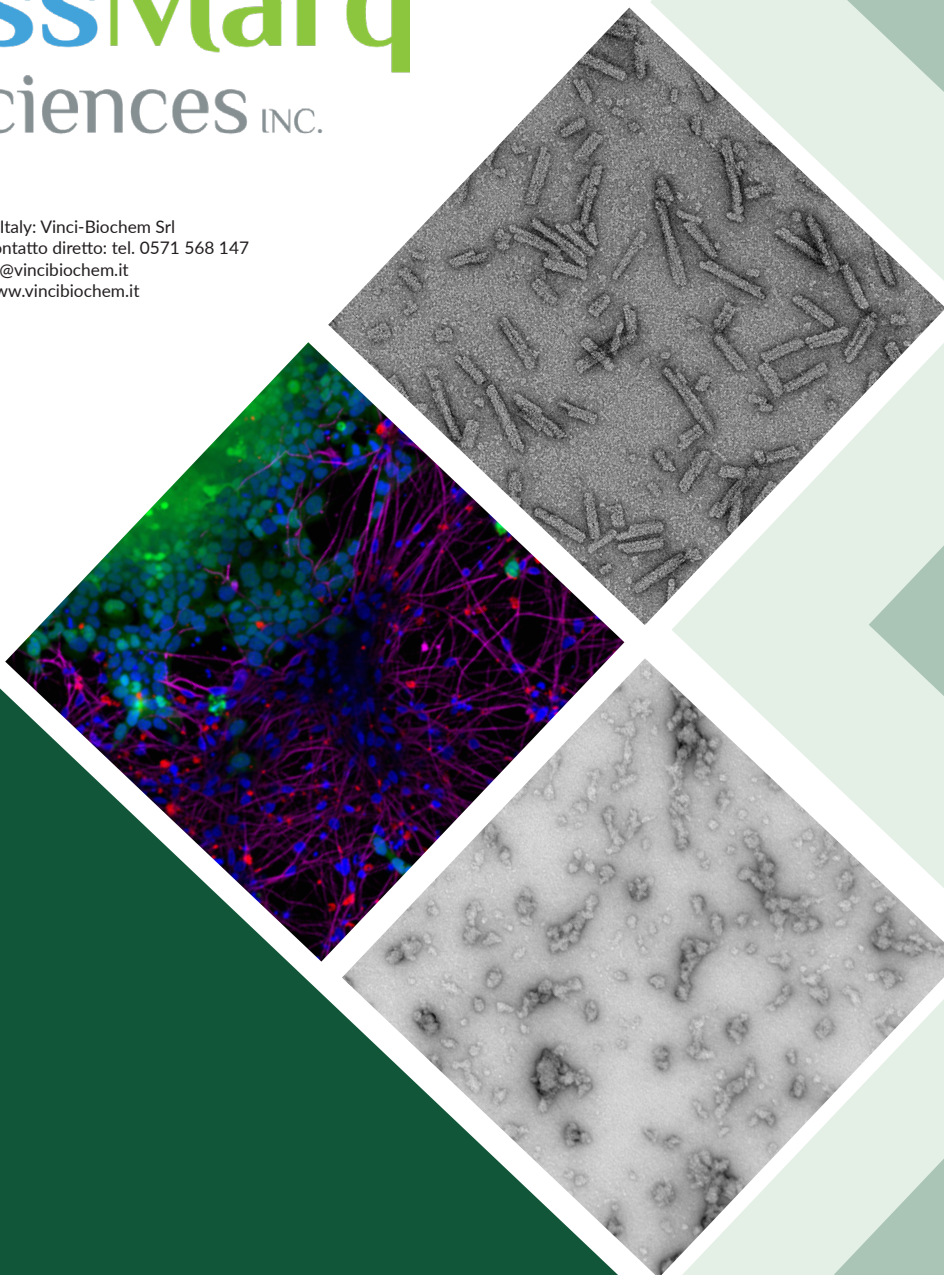




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In Italy: Vinci-Biochem Srl
Contatto diretto: tel. 0571 568 147
vb@vincibiochem.it
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Alpha Synuclein

Pre-formed Fibrils | Oligomers | Monomers | Antibodies



Alpha Synuclein
Protein Citations

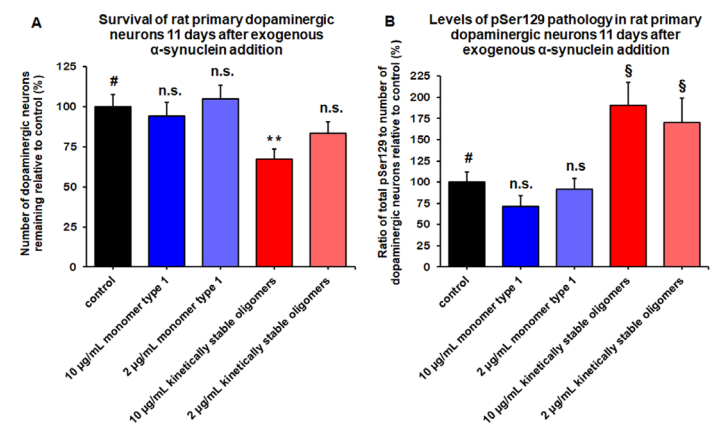
stressmarq.com/snca

Pre-formed Fibrils | Oligomers | Monomers

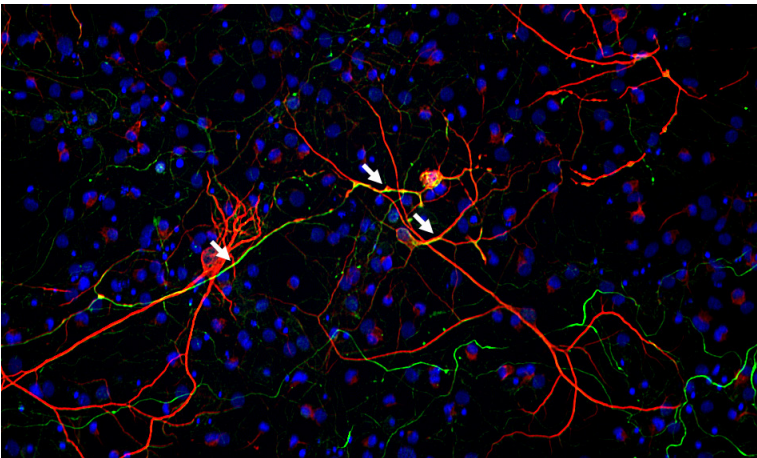
Tools for Neurodegenerative Disease Research

Alpha synuclein is a highly soluble, small protein without intrinsic structure, abundantly present in the brain, primarily in presynaptic terminals of neurons. It is involved in synaptic vesicle release for signaling, including dopamine, which is important for movement. Alpha synuclein has been shown to aggregate into various oligomeric and fibrillary forms and soluble, misfolded alpha synuclein aggregates are neurotoxic and can spread disease in a prion-like fashion. “Synucleinopathies” are a group of neurodegenerative diseases that includes Parkinson’s disease (PD), dementia with Lewy bodies (DLB), diffuse Lewy body disease (DLBD), and multiple system atrophy (MSA), which are all caused by misfolded alpha synuclein. Indeed, alpha synuclein aggregation is a hallmark of Parkinson’s disease and different forms of the protein can be used to develop disease models that reproduce the pathological features of this disorder. StressMarq manufactures the largest range of monomeric, oligomeric and fibrillar alpha synuclein constructs for neurodegenerative disease research.

Fibrils and Oligomers Induce Toxicity and pSer129 Pathology

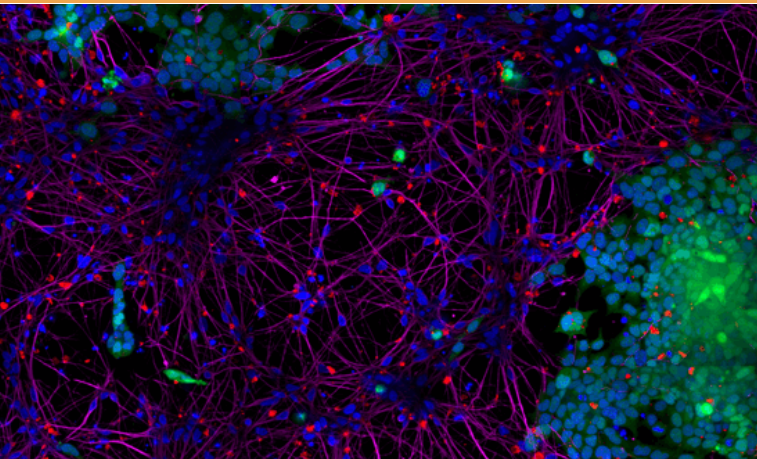


Kinetically Stable Alpha Synuclein Oligomers (catalog#SPR-484) show toxicity to rat primary dopaminergic neurons.

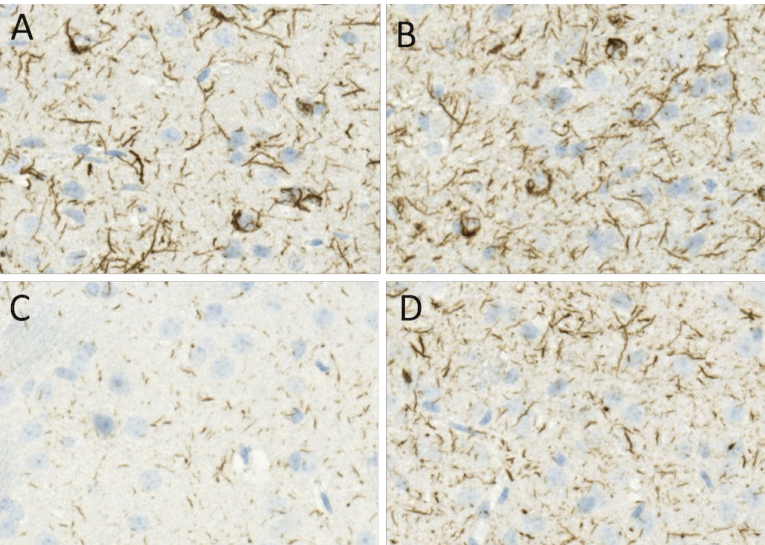


Parkinson’s-associated pSer129 pathology induced in rat primary dopaminergic cells with KS Alpha Synuclein Oligomers (catalog# SPR-484).

Cell-to-Cell Transmission



Alpha Synuclein PFFs (catalog#SPR-322, red) were shown to be taken up by SH-SY5Y cells (green) and transmitted to neuronal iPSCs (magenta) within 14 days.



Spread of aggregates throughout mouse brain after injection with Mouse Alpha Synuclein PFFs (catalog# SPR-324). (A) contralateral cortex (B) ipsilateral cortex (C) contralateral striatum (D) ipsilateral striatum

Pre-formed Fibrils | Oligomers | Monomers

Alpha Synuclein Pre-formed Fibrils (PFFs) & Monomers

Product Description	Pre-formed Fibrils Catalog#	Monomers Catalog#
Human Alpha Synuclein (Type 1)	SPR-322	SPR-321
Human Alpha Synuclein: ATTO 594	SPR-322-A594	-
Human Alpha Synuclein (Type 2)	SPR-317	SPR-316
Mouse Alpha Synuclein (Type 1)	SPR-324	SPR-323
Human Alpha Synuclein N-Terminal Acetylated (Type 1)	SPR-332	SPR-331
Human Alpha Synuclein A53T Mutant (Type 1)	SPR-326	SPR-325
Human Alpha Synuclein A90C Mutant NEW!	-	SPR-478
Human Alpha Synuclein S87N Mutant NEW!	SPR-500	SPR-499
Human Alpha Synuclein S129A Mutant NEW!	SPR-506	SPR-505
Human Alpha Synuclein A53T, S87N, N103G Mutant NEW!	SPR-504	SPR-503
Human Alpha Synuclein E114C Mutant: ATTO 488 NEW!	SPR-518-A488	SPR-517-A488
Human Alpha Synuclein: Biotinylated (C-terminus) NEW!	SPR-508	SPR-507
Human Alpha Synuclein pSer129 NEW!	SPR-521	SPR-520
Human Alpha Synuclein Filaments (Immature Fibrils)	SPR-450	-
Rat Alpha Synuclein	SPR-482	SPR-481
Alpha Synuclein: RT-QuIC/SAA Substrate COMING SOON!	-	SPR-519

Alpha Synuclein & Tau Co-Polymer Fibrils

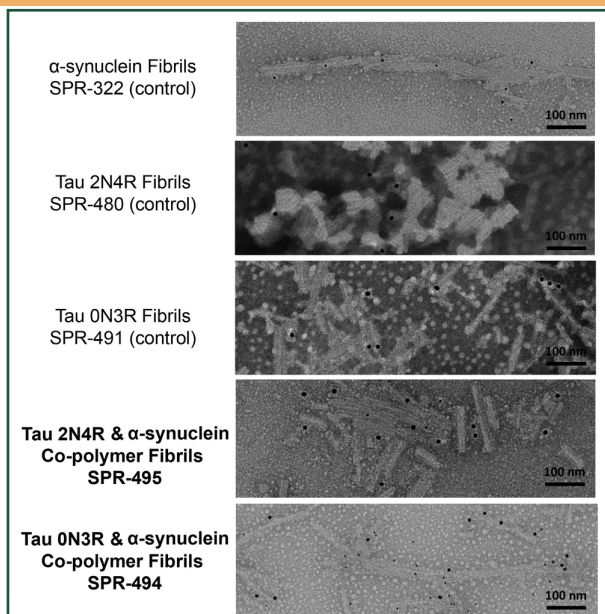
Product Description	Catalog#
Human Alpha Synuclein and Tau-441 (2N4R) Co-Polymer Fibrils	SPR-495
Human Alpha Synuclein and Tau-352 (fetal 0N3R) Co-Polymer Fibrils	SPR-494

Alpha Synuclein Oligomers

Product Description	Catalog#
Human Alpha Synuclein Oligomers (Kinetically Stable)	SPR-484
Human Alpha Synuclein Oligomers (Dopamine HCl Stabilized)	SPR-466
Human Alpha Synuclein Oligomers (EGCG Stabilized)	SPR-469

Alpha Synuclein & Tau Co-Polymer Fibrils

StressMarq's co-polymer fibrils are developed by co-incubating Alpha Synuclein and Tau monomers together to form **fibrils that contain both alpha synuclein and tau proteins within a single fibril**. These co-polymer fibrils have been demonstrated to seed fibril formation of both tau monomers and of a mixture of alpha synuclein and tau monomers.



Immuno-TEM of Tau & Alpha Synuclein Co-Polymer Fibrils. 6nm (asyn) and 12nm (tau) signals only appear together in the same fibril strand for the co-polymer fibril samples, and no antibody cross reactivity is observed in control alpha-synuclein or tau fibrils. Antibodies: Anti-aSyn (cat#SMC-532) and Anti-Tau (cat#SPC-802); Secondaries: 6nm Colloidal Gold conjugated Goat Anti-Mouse and 12nm Colloidal Gold conjugated Goat Anti-Rabbit.

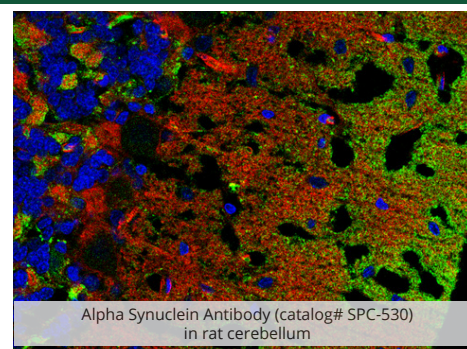
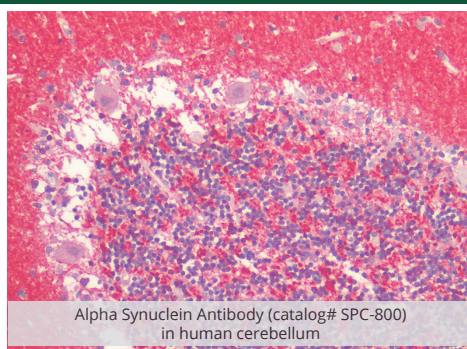
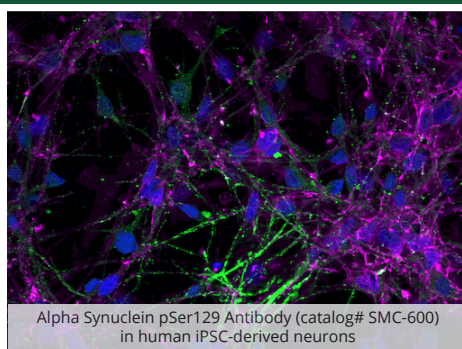
About Co-Polymer Fibrils

Tau and alpha synuclein polymerize into amyloid fibrils to form filamentous inclusions in neurodegenerative diseases such as Alzheimer's and Parkinson's disease. Tau has been shown to interact with alpha synuclein *in vitro* (2), with synergistic cross-seeding between tau and alpha synuclein resulting in polymerization of each other into fibrillary amyloid lesions in neuronal cultures and *in vivo* (3,4). **Recombinant tau and alpha synuclein co-polymer fibrils have demonstrated a more widespread transmission of induced pathology in a rodent model of tauopathies compared to tau or alpha synuclein fibrils alone** (5). These co-polymer fibrils have also shown enhanced alpha synuclein aggregation *in vitro*, and more severe alpha synuclein pathology and Parkinson's disease-like symptoms in mice (6).

Please inquire or see website for references.

Product Description	Catalog#
Human Alpha Synuclein & Tau-441 (2N4R) Co-Polymer Fibrils	SPR-495
Human Alpha Synuclein & Tau-352 (fetal 0N3R) Co-Polymer Fibrils	SPR-494

Alpha Synuclein Antibodies



Target	Clone	Host	Applications	Reactivity	Catalog #
Alpha Synuclein	3C11	Mouse	WB, ICC/IF	Hu, Ms, Rt	SMC-530
Alpha Synuclein	10H7	Mouse	WB, ICC/IF	Hu, Ms, Rt	SMC-531
Alpha Synuclein	3F8	Mouse	WB, ICC/IF, IHC	Hu, Ms, Rt	SMC-532
Alpha Synuclein	4F1	Mouse	WB, ICC/IF, IHC	Hu, Ms, Rt	SMC-533
Alpha Synuclein	PAb	Rabbit	WB, IHC	HU, Ms, Rt	SPC-800
Alpha Synuclein (pSer129)	J18	Rabbit	WB, IHC	Hu, Ms	SMC-600
Alpha Synuclein (pSer129)	PAb	Rabbit	WB, ICC/IF, IHC	Hu, Ms, Rt	SPC-742
Alpha Synuclein (Aggregate-Specific) NEW!	2F11	Mouse	WB, DB, IP, IHC, ICC-IF, ImmunoGold labelling	Hu, Ms	SMC-617

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 vb@vincibiochem.it
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