SNCA Protein, Human

Cat. No.:	HY-P70577
Synonyms:	Alpha-Synuclein; Non-A Beta Component of AD Amyloid; Non-A4 Component of Amyloid Precursor; NACP; SNCA; NACP; PARK1
Species:	Human
Source:	E. coli
Accession:	P37840-1 (M1-A140)
Gene ID:	6622
Molecular Weight:	Approximately 18.0 kDa

PROPERTIES

AA Sequence	M D V F M K G L S K A K E G V V A A A E K T K Q G V A E A A G K T K E G V L Y V G S K T K E G V V H G V A T V A E K T K E Q V T N V G G A V V T G V T A V A Q K T V E G A G S I A A A T G F V K K D Q L G K N E E G A P Q E G I L E D M P V D P D N E A Y E M P S E E G Y Q D Y E P E A
Biological Activity	Measured by its ability to inhibit cell proliferation of A549 cells. The ED_{50} for this effect is typically 15.86 ng/mL, corresponding to a specific activity is 6.31×10^4 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4 or PBS, pH 7.4, 8% trehalose.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years from date of receipt. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	alpha-Synuclein (SNCA), a pivotal neuronal protein, orchestrates diverse roles in synaptic activity, including the regulation of synaptic vesicle trafficking and neurotransmitter release. As a monomer, it actively participates in synaptic vesicle exocytosis, enhancing vesicle priming, fusion, and dilation of exocytotic fusion pores, and mechanistically increases local Ca(2+) release from microdomains, crucial for ATP-induced exocytosis. In its multimeric membrane-bound state, SNCA functions as a molecular chaperone, assisting in the folding of synaptic fusion components (SNAREs) at the presynaptic

plasma membrane, a process vital for maintaining normal SNARE-complex assembly during aging. SNCA also plays a crucial role in regulating dopamine neurotransmission by interacting with the dopamine transporter (DAT1) and modulating its activity. Existing as both a soluble monomer and homotetramer, a dynamic intracellular population of tetramers and monomers coexists, with the tetramer playing an essential role in maintaining homeostasis. SNCA engages in a complex network of interactions with proteins such as UCHL1, synphilin-1/SNCAIP, CALM1, STXBP1, VAMP2, SNAP25, RPH3A, RAB3A, SERF1A, and SEPTIN4, highlighting its involvement in intricate molecular processes governing synaptic function and integrity.

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