Recombinant ACHA3 protein (His tag)

Catalog Number	544560
Species	Human
Expression System	E. coli
Accession	P32297
Molecular Weight	Predictes a molecular mass of 27.46 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 28 kDa band.

Product Information

Sequence Region	32-250
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 32-250 aa (P32297) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Neuronal Acetylcholine Receptor Subunit Alpha-3 (CHRNA3) Fragment (aa 32-250) is a high-purity, stable protein derived from human sources, designed for structural and biochemical studies. This fragment represents a soluble and functional unit of the CHRNA3 protein, which plays a critical role in neuronal signaling as part of pentameric, ligand-gated cation channels. Ideal for investigating receptor assembly, ion channel properties, and neuropharmacological applications. The full-length Neuronal Acetylcholine Receptor Subunit Alpha-3 (CHRNA3) is a key component of neuronal nicotinic acetylcholine receptors (nAChRs), which function as pentameric, ligand-gated cation channels with high calcium permeability. These receptors mediate excitatory synaptic transmission in the nervous system and neuromuscular junction, influencing attributes such as activation kinetics, pH sensitivity, and cation permeability. CHRNA3 forms heteropentameric complexes with subunits like CHRNB2 and CHRNB4, predominantly in autonomic ganglia (ganglionic nicotinic receptors), and also with CHRNA5 and CHRNB3 as accessory subunits. It is involved in critical pathways, including the habenulo-interpeduncular tract, where it modulates the mesolimbic dopamine system, affecting reward circuits and addiction. Additionally, CHRNA3 contributes to hypothalamic regulation of food intake via POMC neuron activation and modulates reflex bladder activity in the urothelium through calcium influx and ATP release. Subcellularly, CHRNA3 localizes to the synaptic and cell membranes, endoplasmic reticulum, and Golgi apparatus, with its translocation to the plasma membrane promoted by interaction with UBXN2A/UBXD4. This recombinant fragment (aa 32-250) is computationally optimized for stability and solubility, enabling detailed analysis of its structural and functional roles in neuronal processes.