Recombinant NSMA2 protein (His tag)

Catalog Number	546102
Synonyms	Neutral sphingomyelinase 2; nSMase-2; nSMase2; Neutral sphingomyelinase II
Species	Human
Expression System	E. coli
Accession	Q9NY59
Molecular Weight	Predictes a molecular mass of 36.74 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 40 kDa band.

Product Information

Sequence Region	343-655
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>89%, 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 343-655 aa (Q9NY59) 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 Human Sphingomyelin Phosphodiesterase 3 (nSMase2) Fragment (aa 343-655) is a high-purity, soluble protein designed for structural and functional studies. This 313-amino acid fragment retains key biochemical properties, offering researchers a stable and reliable tool to investigate ceramide-mediated signaling pathways, cell cycle regulation, and mineralization processes. Sphingomyelin phosphodiesterase 3 (SMPD3), also known as neutral sphingomyelinase 2 (nSMase2), catalyzes the hydrolysis of sphingomyelin to produce ceramide and phosphocholine. Ceramide serves as a critical lipid mediator in apoptosis, growth arrest, and cellular differentiation, enabling the protein to independently regulate these processes. It also hydrolyzes sphingosylphosphocholine and functions as a growth suppressor in confluent cells, contributing to postnatal development and bone and dentin mineralization. The enzyme binds anionic phospholipids like phosphatidylserine and phosphatidic acid, which modulate its activity and subcellular localization. SMPD3 is primarily localized to the Golgi apparatus and plasma membranes via lipid anchors and may reside in detergent-resistant subdomains. It has been implicated in IL-1β-induced JNK activation and NF-κB-mediated transcriptional regulation of NOS2/iNOS under inflammatory conditions, highlighting its role in stress and immune responses.