# Recombinant SMS2 protein (His tag)

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| **Catalog Number** | 540806 |
| **Synonyms** | Sphingomyelin synthase 2; SMS2 |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | Q8NHU3 |
| **Molecular Weight** | Predictes a molecular mass of 9.89 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 10 kDa band. |

## Product Information

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| **Sequence Region** | 296-365 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >87%, 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 296-365 aa (Q8NHU3) were fused with 6His tag. |

## Storage & Handling

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| **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.<br>Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise. |

## Description

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| **Description** | Recombinant Human Phosphatidylcholine:ceramide cholinephosphotransferase 2 (SMS2) Fragment (residues 296-365) is a 70-amino acid protein fragment designed for structural and biochemical studies. This fragment represents a stable, soluble region of the enzyme, which plays a key role in sphingomyelin biosynthesis and membrane lipid homeostasis, making it an ideal tool for investigating lipid metabolism and signal transduction pathways.<br>Phosphatidylcholine:ceramide cholinephosphotransferase 2 (SMS2), encoded by the SGMS2 gene, is a sphingomyelin synthase that primarily functions at the plasma membrane with minor localization to the Golgi apparatus. It catalyzes the reversible transfer of phosphocholine from phosphatidylcholine to ceramide, producing sphingomyelin and diacylglycerol (DAG), and can also utilize phosphatidylethanolamine to form ceramide phosphoethanolamine. This enzyme regulates receptor-mediated signal transduction by modulating levels of mitogenic DAG and proapoptotic ceramide, while sphingomyelin contributes to membrane raft structure for protein sorting and signaling. Additionally, SMS2 influences secretory transport via DAG regulation at the Golgi and is essential for normal bone matrix mineralization, highlighting its broad physiological significance in cellular homeostasis and disease processes. |