

Recombinant Rat NMU Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52273

Size: 10ug, 100ug

Protein Name: Neuromedin-U (Prepro-NMU) [Cleaved into: Neuromedin-U precursor-related peptide 36 (NURP36); Neuromedin-U precursor-related peptide 33 (NURP33); Neuromedin-U-23 (NmU-23)]

Synonym: Nmu

UniProt ID: P12760

UniProt Link: www.uniprot.org/uniprotkb/P12760/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 174 AA

Molecular Weight: 19 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSRAANRRPGLSAGQLAAATASPLLSLLLLLACCADACRGTPISPQRLPPEQELQLWNEIPEACASF
LSVDSQPQASVALRKLCRVLMEIFQKPQEQTEKDNAKRFLFHYSKTQKLGNSNVVSSVVHPLLQLVP
QLHERRMKRYKVNEYQGPVAPSGGFFLFRPRNGKRSTSI

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Neuromedin-U (Prepro-NMU) [Cleaved into: Neuromedin-U precursor-related peptide 36 (NURP36); Neuromedin-U precursor-related peptide 33 (NURP33); Neuromedin-U-23 (NmU-23)] produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: [Neuromedin-U-23]: Multifunctional neuropeptide that acts via two G protein-coupled receptors, NMUR1 and NMUR2 (PubMed:28874765). Functionally, is involved in pleiotropic roles, including regulation of feeding, energy balance, blood pressure and smooth muscle contraction (PubMed:10894543, PubMed:3178840). Additionally modulates hormone release and inflammatory responses in a tissue- and receptor-dependent manner (By similarity). Mechanistically, binding to NMUR1 or NMUR2 results in coupling of receptors to Gα proteins, namely GNAQ/Gaq or GNA11/Ga11 and GNAI1/Gai subunits. GNAQ/Gaq or GNA11/Ga11 coupling leads to the activation of a phospholipase C (PLC), which hydrolyzes PIP2 (phosphatidylinositol 4,5-bisphosphate) into DAG (diacylglycerol) and IP3 (inositol trisphosphate), and subsequent intracellular calcium mobilization via IP3 receptors on the endoplasmic reticulum. GNAI1/Gai coupling inhibits forskolin-stimulated cAMP accumulation. In pancreatic beta cells, regulates insulin secretion through NMUR1 coupled to GNAI2 and GNAO1, resulting in reduced intracellular Ca²⁺ influx and cAMP levels (By similarity). Through NMUR1 in Th2-type T cells, enhances type 2 cytokine secretion and modulates inflammatory responses via activation of PLC-calcineurin-MEK and PI3K signaling pathways (By similarity).; [Neuromedin-U precursor-related peptide 33]: Does not function as a ligand for either NMUR1 or NMUR2 (PubMed:28874765). Indirectly induces prolactin release although its potency is much lower than that of neuromedin precursor-related peptide 36 (PubMed:28874765).; [Neuromedin-U precursor-related peptide 36]: Does not function as a ligand for either NMUR1 or NMUR2 (PubMed:28874765). Indirectly induces prolactin release from lactotroph cells in the pituitary gland, probably via the hypothalamic dopaminergic system.

Subcellular Localization: [Neuromedin-U-23]: Secreted .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.