

# Recombinant Rat NMUR1 Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP52584

Size: 10ug, 100ug

Protein Name: Neuromedin-U receptor 1 (NMU-R1) (G protein-coupled receptor 66) (G protein-coupled receptor FM-3) (FM-3)

Synonym: Nmur1, Gpr66, NMU1R

UniProt ID: Q9JJI5

UniProt Link: [www.uniprot.org/uniprotkb/Q9JJI5/entry](http://www.uniprot.org/uniprotkb/Q9JJI5/entry)

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 425 AA

Molecular Weight: 48 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

MTTPCLNCSFFPGQLSPNASTGLLSCNDSEFKEHFDLEDLNLTHEDLRLKYLGPQQVKQFLPICVTY  
LLIFVVGTLGNGLTCTVILRQKAMHTPTNFYLFSLAVSDLLVLLVGLPLELYEMQHNYPFQLGAGGCY  
FRILLLETVCLASVLNVTALSVERYVAVVHPLQAKSVMTRTHVRRMLGAIWVFAILFSLPNTSLHGLSP  
LYVPCRGPVPDSVTCTLVRPQFFYKLVITILLFFCLPMVTISVLYLLIGLRLRRERILLQEEVKGRISA  
AARQASHRSIQLRDRERRQVTKMLIALVIVFGTCWVPFHADRLMWSMVSHWTDGLRLAFQSVHLAS  
GVFLYLGSAANPVLNLMSTRFRESFRETLLGLGTRCCHRHQPRHDSHSHLRLTTVSTLCDRNSRDV  
PLAENRDPGCEQETDPPE

## 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 receptor 1 (NMU-R1) (G protein-coupled receptor 66) (G protein-coupled receptor FM-3) (FM-3) 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:** G protein-coupled receptor for the neuropeptides neuromedin-U (NMU) and neuromedin-S (NMS) (PubMed:10783389). Functionally, is involved in regulation of feeding and energy balance (PubMed:10894543). Additionally modulates blood pressure, smooth muscle contraction, hormone release and inflammatory responses in a tissue- and receptor-dependent manner (By similarity). Mechanistically, upon ligand binding, couples to Gα proteins, namely GNAQ/Gαq or GNA11/Gα11 and GNAI1/Gαi subunits. GNAQ/Gαq or GNA11/Gα11 coupling activate a phospholipase C (PLC), hydrolyzing PIP2 (phosphatidylinositol 4,5-bisphosphate) into DAG (diacylglycerol) and IP3 (inositol trisphosphate) and mobilizing intracellular calcium via IP3 receptors on the endoplasmic reticulum. Also couples to GNAI1/Gαi to inhibit forskolin-stimulated cAMP accumulation (By similarity). In pancreatic beta cells, through neuromedin U-25, regulates insulin secretion where it coupled to GNAI2 and GNAO1, resulting in reduced intracellular Ca<sup>2+</sup> influx and cAMP levels. Through neuromedin U-25 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).

**Subcellular Localization:** Cell membrane ; Multi-pass membrane protein .

## 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.