

Recombinant Rat OXYR Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52419

Size: 10ug, 100ug

Protein Name: Oxytocin receptor (OT-R)

Synonym: Oxtr, Otr

UniProt ID: P70536

UniProt Link: www.uniprot.org/uniprotkb/P70536/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 388 AA

Molecular Weight: 43 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MEGTPAANWSVELDLGSGVPPGEEGNRTAGPPQRNEALARVEVAVLCLILFLALSGNACVLLALRTT
RHKHSRLFFFMKHLADIADLVAVFQVLPQLLWDITFRFYGPDLLCRLVKYLQVVGMPFASTYLLLLMSL
DRCLAICQPLRLRRRTDRLAVLGTWLGCLVASAPQVHIFSLREVADGVFDCWAVFIQPWGPKAYVT
WITLAVYIVPVIVLAACYGLISFKIWQNLRLKTAIAAAAAAEGNDAAGGAGRAALARVSSVKLISKAKIRT
VKMTFIIVLAFIVCWTPFFVQMWVWDVNAPKEASAFIAMLASLNCCNPWIYMLFTGHLFHELV
QRFFCCSARYLKSRPGETSVSKKSNSSTFVLSRRSSSQRSCSQPSSA

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 Oxytocin receptor (OT-R) 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 oxytocin (OXT), a neuropeptide hormone released by the posterior pituitary gland that plays a key role in social behavior and other biological processes, such as milk ejection (PubMed:10497238, PubMed:11606726, PubMed:35104164, PubMed:9548257). Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of downstream effectors, such as phospholipase C (PubMed:10497238). OXTR is mainly coupled to G(q) G proteins and mediates production of diacylglycerol (DAG) and inositol 1,4,5-trisphosphate (IP3) second messengers that modulate the activity of phosphatidylinositol 3-kinase and promote the release of Ca(2+) ions from intracellular stores, respectively (PubMed:10497238). In presence of high levels of oxytocin, also coupled to G(i) G proteins, mediating inhibition of adenylate cyclase activity (PubMed:10497238). Central release of oxytocin plays essential roles in social behavior, such as maternal care, social cognition and affiliative behaviors, triggering signaling that modulates neural circuits by altering ion channel activity, changing intrinsic neuronal properties and modifying synaptic transmission (both excitatory and inhibitory) (PubMed:11606726). Peripheral release of oxytocin (secretion into the bloodstream) promotes various processes, such as parturition, lactation or osteoblast differentiation (By similarity). OXTR-mediated signaling promotes milk ejection by triggering and strengthening contraction of the smooth muscle of mammary gland (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.