

Recombinant Rat P2RX7 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52519

Size: 10ug, 100ug

Protein Name: P2X purinoceptor 7 (P2X7) (ATP receptor) (P2Z receptor) (Purinergic receptor)

Synonym: P2rx7

UniProt ID: Q64663

UniProt Link: www.uniprot.org/uniprotkb/Q64663/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 595 AA

Molecular Weight: 68 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPACCSWNDVFQYETNKVTRIQSVNYGTIKWILHMTVFSYVSFALMSDKLYQRKEPLISSVHTKVKG
VAEVTENVTEGGVTKLVHGIFDTADYTLPLQGNSFFVMTNYLKSEGQEQKLCPEYPSRGKQCHSDQ
GCIKGWMDPQSKGIQTGRICIPYDQKRKTCEIFAWCPAEEGKEAPRPALLRSAENFTVLIKNNIDFPG
HNYTTRNILPGMNISCTFHKTWNPQCPIFRLGDIFQEIGENFTEVAVQGGIMGIEIYWDCNLDWSHR
CQPKYSFRRLDDKYTNESLFPGYNFRYAKYYKENGMEKRTLIAFGVRFDILVFGTGGKFDIIQLVVYI
GSTLSYFGLATVCIDLIINTYASTCCRSRVYPSCCKCEPCAVNEYYYRKKCEPIVEPKPTLKYVSFVDE
PHIWMVDQQLLGKSLQDVKGQEVPRPQTDFLELSRLSLSLHHSPPIPGQPEEMQLLQIEAVPRSRDS
PDWCQCGNCLPSQLPENRRALEELCCRRKPGQCITSELF SKIVLSREALQLLLLYQEPLLALEGEAI
NSKLRHCAYRSYATWRFVSQDMADFAILPSCCRWKIRKEFPKTQQQYSGFKYPY

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 P2X purinoceptor 7 (P2X7) (ATP receptor) (P2Z receptor) (Purinergic receptor) 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: ATP-gated nonselective transmembrane cation channel that requires high millimolar concentrations of ATP for activation (PubMed:10204537, PubMed:39107314, PubMed:8614837). Upon ATP binding, it rapidly opens to allow the influx of small cations Na(+) and Ca(2+), and the K(+) efflux (PubMed:8614837). Also has the ability to form a large pore in the cell membrane, allowing the passage of large cationic molecules (PubMed:17036048, PubMed:18852304). In microglia, may mediate the transmembrane transport of exogenous NADPH (By similarity). In immune cells, P2RX7 acts as a molecular sensor in pathological inflammatory states by detecting and responding to high local concentrations of extracellular ATP. In microglial cells, P2RX7 activation leads to the release of pro-inflammatory cytokines, such as IL-1beta and IL-18, through the activation of the NLRP3 inflammasome and caspase-1. Cooperates with KCNK6 to activate NLRP3 inflammasome (By similarity). Activates death pathways leading to apoptosis and autophagy (By similarity). Activates death pathways leading to pyroptosis (By similarity). Involved in the homeostatic wound healing response to tissue injury, a multistep cascade that guides neutrophil migration to necrotic sites while avoiding collateral damage of healthy tissues. Senses ATP released from necrotic cells triggering activation of NLRP3 inflammasome and neutrophil adhesion to the vascular endothelium close to the injury site.; [Isoform 2]: Has a higher affinity for ATP, slower deactivation and an increased propensity to form large cation-permeable pores.

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.