

# Recombinant Rat PAR2 Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP52504

Size: 10ug, 100ug

Protein Name: Proteinase-activated receptor 2 (PAR-2) (Coagulation factor II receptor-like 1) (Thrombin receptor-like 1)

Synonym: F2rl1, Par2

UniProt ID: Q63645

UniProt Link: [www.uniprot.org/uniprotkb/Q63645/entry](http://www.uniprot.org/uniprotkb/Q63645/entry)

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 397 AA

Molecular Weight: 44 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

MRSLSLAWLLGGITLLAASASCNRTVNAPGPNKGRSLIGRLDTPPPITGKGAPVEPGFSVDEFSAS  
VLTGKLTTVFLPVIYIIVFVIGLPSNGMALWVFFFRTKKKHPAVIYMANLALADLLSVIWFPLKISYHLHG  
NDWTYGDALCKVLIGFFYGNMYCSILFMTCLSVQRYWVIVNPMGHSRKRANIAVGVSLAIWLLIFLVTI  
PLYVMRQTIYIPALNITTCHDVLPEEVLVGDMFSYFLSLAIGVFLFPALLTASAYVLMIKTLRSSAMDEH  
SEKKRRRAIRLIITVLSMYFICFAPSNVLLVVHYFLIKSQRQSHVYALYLVALCLSTLNSCIDPFVYYFVS  
KDFRDQARNALLCRSVRTVKRMQISLTSNKFSRKSSSYSSSSTS VKTSY

## 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 Proteinase-activated receptor 2 (PAR-2) (Coagulation factor II receptor-like 1) (Thrombin receptor-like 1) 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:** Receptor for trypsin and trypsin-like enzymes coupled to G proteins. Its function is mediated through the activation of several signaling pathways including phospholipase C (PLC), intracellular calcium, mitogen-activated protein kinase (MAPK), I-kappaB kinase/NF-kappaB and Rho. Can also be transactivated by cleaved F2R/PAR1. Involved in modulation of inflammatory responses and regulation of innate and adaptive immunity, and acts as a sensor for proteolytic enzymes generated during infection. Generally is promoting inflammation. Can signal synergistically with TLR4 and probably TLR2 in inflammatory responses and modulates Tlr3 signaling. Has a protective role in establishing the endothelial barrier; the activity involves coagulation factor X. Regulates endothelial cell barrier integrity during neutrophil extravasation, probably following proteolytic cleavage by PRTN3 (By similarity). Proposed to have a bronchoprotective role in airway epithelium, but also shown to compromise the airway epithelial barrier by interrupting E-cadherin adhesion. Involved in the regulation of vascular tone; activation results in hypotension presumably mediated by vasodilation. Associates with a subset of G proteins alpha subunits such as GNAQ, GNA11, GNA14, GNA12 and GNA13, but probably not with G(o)-alpha, G(i) subunit alpha-1 and G(i) subunit alpha-2. Believed to be a class B receptor which internalizes as a complex with arrestin and traffic with it to endosomal vesicles, presumably as desensitized receptor, for extended periods of time. Mediates inhibition of TNF stimulated JNK phosphorylation via coupling to G GNAQ and GNA11; the function involves dissociation of RIPK1 and Tradd from TNFR1. Mediates phosphorylation of nuclear factor NF-kappa-B RELA subunit at 'Ser-536'; the function involves Ikbkb and is predominantly independent of G proteins. Involved in cellular migration. Involved in cytoskeletal rearrangement and chemotaxis through beta-arrestin-promoted scaffolds; the function is independent of GNAQ and GNA11 and involves promotion of cofilin dephosphorylation and actin filament severing. Induces redistribution of COPS5 from the plasma membrane to the cytosol and activation of the JNK cascade is mediated by Cops5. Involved in the recruitment of leukocytes to the sites of inflammation and is the major PAR receptor capable of modulating eosinophil function such as pro-inflammatory cytokine secretion, superoxide production and degranulation. During inflammation promotes dendritic cell maturation, trafficking to the lymph nodes and subsequent T-cell activation. Involved in antimicrobial response of innate immune cells; activation enhances phagocytosis of Gram-positive and killing of Gram-negative bacteria. Acts synergistically with interferon-gamma in enhancing antiviral responses (By similarity). Probably mediates activation of pro-inflammatory and pro-fibrotic responses in fibroblasts, triggered by coagulation factor Xa (F10) (By similarity). Probably mediates activation of barrier protective signaling responses in endothelial cells, triggered by coagulation factor Xa (F10) (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.