

Product datasheet for **TA328629**

Proteinase Activated Receptor 4 (F2RL3) Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	FC, IF, IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3,000; FC: 1:50-1:600
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)HLRGQRWPFGEAA(S)R, corresponding to amino acid residues 136-150 of human PAR-4. Cys 149 was replaced with Ser. 1st extracellular loop.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.025% NaN ₃ .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	F2R like thrombin/trypsin receptor 3
Database Link:	NP_003941 Entrez Gene 14065 Mouse Entrez Gene 116498 Rat Entrez Gene 9002 Human Q96RI0



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Background:

Protease-activated receptor 4 (PAR-4) belongs to a family of four G protein-coupled receptors (PAR-1 - 4) that are activated as a result of proteolytic cleavage by certain serine proteases, hence their name. In this novel modality of activation, a specific protease cleaves the PAR receptor within a defined sequence in its extracellular N-terminal domain. This results in the creation of a new N-terminal tethered ligand, which subsequently binds to a site in the second extracellular loop of the same receptor. This binding results in the coupling of the receptor to G proteins and in the activation of several signal transduction pathways. Different PARs are activated by different proteases. Hence, PAR-4 is activated by both thrombin and trypsin whereas PAR-1 and PAR-3 are activated only by thrombin and PAR-2 is activated only by trypsin. PAR-4 can be also cleaved and activated by other proteases such as cathepsin G. The intracellular signaling mechanisms mediated by PAR-4 activation are not completely elucidated but they involve calcium mobilization downstream of phospholipase C β through the G α_q pathway. Tissue distribution of PAR-4 is very broad with the highest expression levels found in lung, testis, pancreas and small intestine. In addition, PAR-4 expression was observed in platelets, megakaryocytes and leukocytes. Studies with platelets derived from PAR-4 knockout mice have established an essential role for PAR-4 in thrombin-induced platelet activation. PAR-4 is likely involved in other physiological functions such as regulation of gastrointestinal motility and regulation of vascular endothelial cell function.

Synonyms:

PAR4

Note:

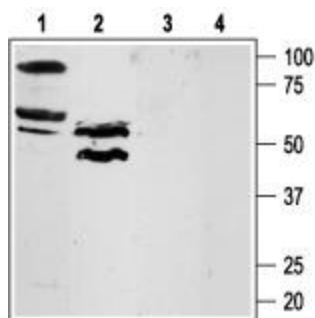
This antibody was tested in live cell imaging. Please see IF/ICC data for detail.

Protein Families:

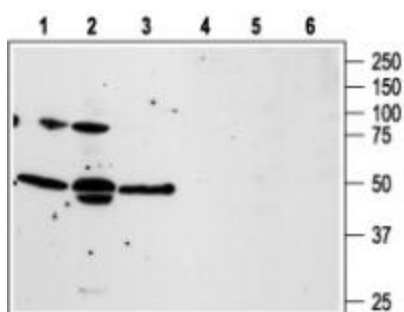
Druggable Genome, GPCR, Transmembrane

Protein Pathways:

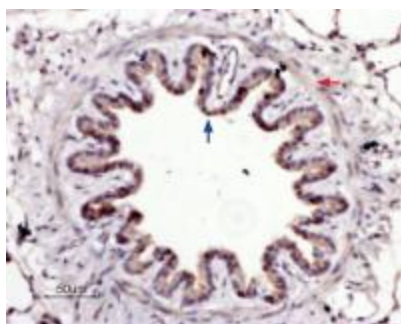
Neuroactive ligand-receptor interaction

Product images:

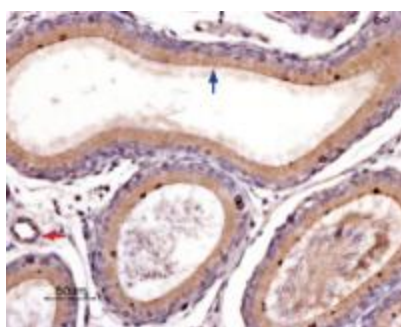
Western blot analysis of rat lung (lanes 1 and 3) and testis (lanes 2 and 4) lysates: 1, 2. Anti-Protease-Activated Receptor-4 (extracellular) antibody, (1:200). 3, 4. Anti-Protease-Activated Receptor-4 (extracellular) antibody, preincubated with the control peptide antigen.



Western blot analysis of human prostate carcinoma PC3 (lanes 1 and 4), and LNCaP (lanes 2 and 5), and human T cell leukemia Jurkat (lanes 3 and 6) cell lines: 1-3. Anti-Protease-Activated Receptor-4 (extracellular) antibody, (1:200). 4-6. Anti-Protease-Activated Receptor-4 (extracellular) antibody, preincubated with the control peptide antigen.



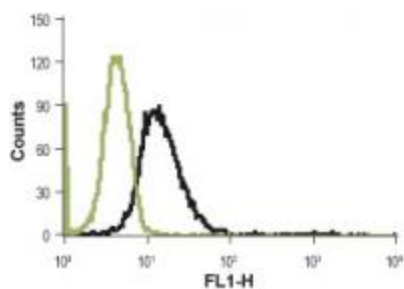
Expression of PAR-4 in rat lung. Immunohistochemical staining of rat lung paraffin-embedded sections using Anti-Protease-Activated Receptor-4 (extracellular) antibody, (1:100). Note that staining is present in the respiratory epithelium of the bronchiole (blue arrow) as well as in the smooth muscle cells of the muscularis mucosae (red arrow). Hematoxylin is used as the counterstain.



Expression of PAR-4 in rat epididymis. Immunohistochemical staining of rat epididymis paraffin-embedded sections using Anti-Protease-Activated Receptor-4 (extracellular) antibody, (1:100). Note that strong and specific staining is present in both the pseudostratified epithelium (blue arrow) and the smooth muscle cells of the muscular of blood vessels (red arrow). Hematoxylin is used as the counterstain.



Expression of PAR-4 in a human breast adenocarcinoma cell line. Immunocytochemical staining of a human breast adenocarcinoma cell line. A. Live intact human MCF-7 cells were stained with Anti-Protease-Activated Receptor-4 (extracellular) antibody, (1:50), followed by goat anti-rabbit-AlexaFluor-488 secondary antibody (green). B. Live view of the cells. C. Nuclei were visualized with the cell-permeable dye Hoechst 33342 (blue).



Indirect Flow cytometry analysis of human promyelocytic leukemia HL-60 cells: black line, Unstained cells + FITC-conjugated goat anti-rabbit antibody. green line, Cells + Anti-Protease-Activated Receptor-4 (extracellular) antibody, (1:40) + FITC conjugated goat anti-rabbit antibody.