OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850, US
Phone: +1-888-267-4436
https://www.origene.com
techsupport@origene.com
EU: info-de@origene.com
CN: techsupport@origene.cn

Product datasheet for TA328618

Thrombin Receptor (F2R) 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
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)KNESGLTEYRLVSINK, corresponding to amino acid residues 61-76 of human PAR-1. Extracellular, N terminal.
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% NaN3.
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:	coagulation factor II thrombin receptor
Database Link:	NP_001983 Entrez Gene 2149 Human P25116

View online »

Background: Protease-activated receptor 1 (PAR-1) 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-1 is activated by thrombin (and is in fact also known as the thrombin receptor), as are PAR-3 and PAR-4, while PAR-2 is activated by trypsin. PAR-1 can be also cleaved and activated by other proteases such as plasmin, Factor Xa, cathepsin G, and others. The intramolecular nature of PAR activation and the continuous presence of the tethered ligand that cannot diffuse away imply the existence of several mechanisms for the rapid termination of PAR signaling. Indeed, following receptor activation, there is rapid phosphorylation of the C-terminal end of the receptor, followed by receptor internalization and degradation. In addition, several proteases can cleave away the tethered ligand, thereby â??disarmingâ? the PAR. PAR-1 signals through several G proteins including Gaq, Gai, and Ga12/13, resulting in the activation of several transduction pathways including intracellular Ca2+ mobilization, Rho and Rac signaling, and MAPK activation. PAR-1 is expressed in several cell types including platelets, leukocytes, vascular endothelial cells, gastrointestinal epithelial cells, myocytes, and neurons. The best studied physiological function of PAR-1 is its involvement in the coagulation cascade. Thrombin, the preeminent ligand of PAR-1, activates the receptor on the surface of platelets, hence inducing platelet aggregation, granular secretion, and procoagulant activity. PAR-1 also plays a crucial role in vascular ontogenesis. Accordingly, PAR-1 knockout mice show bleeding at multiple sites and usually die at mid-gestation. PAR-1 also plays important roles in tumor growth and metastasis. PAR-1 is upregulated in several human cancers as are several proteases such as plasmin and matrix metalloproteases (MMPs) that act as PAR-1 ligands, thereby creating an autocrine loop. PAR-1 activation in cancer cells transmits mitogenic signals through the activation of the erk1/2 pathway and is involved in tumor spread via its pro-angiogenic activity.

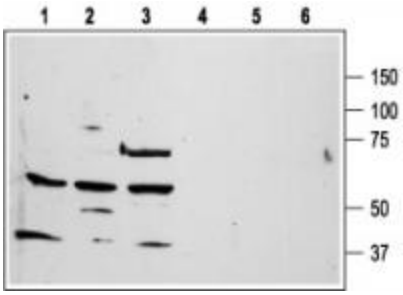
Synonyms: CF2R; HTR; PAR-1; PAR1; TR

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

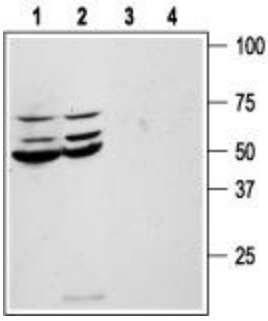
Protein Families: Druggable Genome, GPCR, Transmembrane

Protein Pathways: Calcium signaling pathway, Complement and coagulation cascades, Endocytosis, Neuroactive ligand-receptor interaction, Regulation of actin cytoskeleton

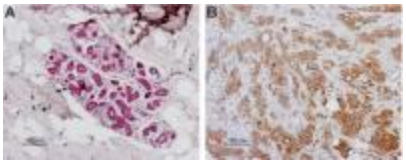
Product images:



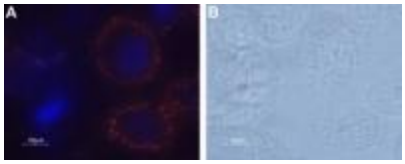
Western blot analysis of human promyelocytic leukemia HL-60 (lanes 1 and 4), human T-cell leukemia Jurkat (lanes 2 and 5), and chronic myelogenous leukemia K562 (lanes 3 and 6) cell line lysates: 1-3. Anti-Human Protease-Activated Receptor-1 (extracellular) antibody, (1:200). 4-6. Anti-Human Protease-Activated Receptor-1 (extracellular) antibody, preincubated with the control peptide antigen.



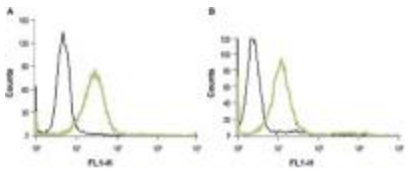
Western blot analysis of human colon cancer HT-29 (lanes 1 and 3) and Colo-205 (lanes 2 and 4) cell line lysates: 1, 2. Anti-Human Protease-Activated Receptor-1 (extracellular) antibody, (1:200). 3, 4. Anti-Human Protease-Activated Receptor-1 (extracellular) antibody, preincubated with the control peptide antigen.



IHC staining of paraffin-embedded human breast sections using Anti-Human Protease-Activated Receptor-1 (extracellular) antibody, (1:100). PAR-1 staining is highly specific for epithelium-derived cells. A. In the normal resting breast, epithelial cells of the mammary ducts are visible using Histofine (pink). B. The breast carcinoma contains epithelium-derived malignant cells stained with DAB (brown). Hematoxilin is used as the counterstain.



Expression of PAR-1 in human prostate PC-3 cell line. Immunocytochemical staining of human prostate PC-3 cell line. A. Live intact PC-3 cells were stained with Anti-Human Protease-Activated Receptor-1 (extracellular) antibody, (1:50), followed by goat-anti-rabbit-AlexaFluor-555 secondary antibody (red staining). Nuclei were visualized using the cell-permeable dye Hoechst 33342 (blue). B. Live view of the same field as A.



Indirect Flow cytometry analysis of live intact HL-60 (human promyelocytic leukemia) (A) and Jurkat (human T cell leukemia) (B) cell lines: black line, Unstained Cells + FITC-conjugated goat anti-rabbit antibody. green line, Cells + Anti-Human Protease-Activated Receptor-1 (extracellular) antibody, (1:20) + FITC-conjugated goat anti-rabbit antibody.