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Rabbit Polyclonal PAR2 antibody

Catalog Number: PAR2-201AP Lot Number:

General Information

Product	PAR2 Antibody
Description	Proteinase-activated receptor 2 Antibody
Accession #	Uniprot: P55086 NCBI: NP_032000.3
Verified Applications	ELISA, IHC, IP, WB
Species Cross Reactivity	Chimpanzee, Human, Monkey, Mouse, Rat
Host	Rabbit
Immunogen	Synthetic peptide taken within amino acid region 300-370 on mouse PAR2 protein.
Specificity	This peptide is directed against a cytoplasmic region of PAR2.
Alternative Nomenclature	Coagulation factor II receptor like 1, F2RL1, GPR11, Thrombin receptor-like 1

Physical Properties

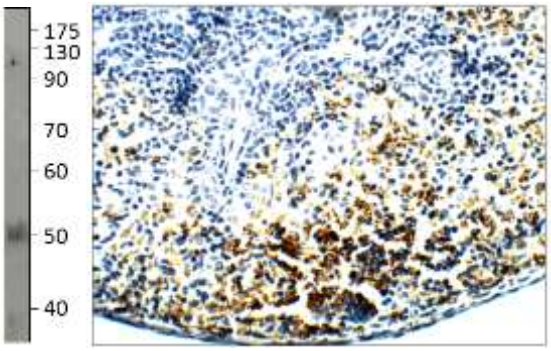
Quantity	100 µg
Volume	200 µl
Form	Affinity Purified Immunoglobulins
Purification Method	Immobilized antigen affinity chromatography.
Immunoglobulin & Concentration	0.62 mg/ml IgG in antibody stabilization buffer
Storage	Store at -20ºC for long term storage.

Recommended Dilutions

DOT Blot	1:15,00-1:20,000
ELISA	1:15,00-1:20,000
Immunohistochemistry	1:50-1:100
Immunoprecipitation	1:200
Western Blot	1:250

Related Products	Catalog #
BIOTIN-Conjugated	PAR2-BIOTIN
FITC-Conjugated	PAR2-FITC
Antigenic Blocking Peptide	P-PAR2
Western Blot Positive Control	PC-PAR2
PAR1 Antibody	PAR1-101AP
PARD3 Antibody	PAR3-301AP

Application Verification:



WB of PAR2-201AP with PC-PAR2. 1:500 antibody dilution in DiluObuffer. Apparent MW is 50 kDa.

Rat Spleen- PAR2
Primary Antibody: PAR2-201AP; 1:100 dilution in IHC Blocking Buffer. DAB (brown) staining and Hematoxylin QS (blue) counterstain. 40X magnification on Leica DM4000. FFPE section.

Dilutions are for reference only. Applications not listed above are not necessarily precluded from working with this antibody. Investigators intending to use an application that has not been verified can request a complimentary sample.

Overview:

Proteinase-activated receptor 2 (PAR2) is a G protein-coupled receptor irreversibly activated by extracellular proteases (1). Activated PAR2 couples to multiple heterotrimeric G-protein subtypes including Gαq, Gαi, and Gα12/13 and is rapidly desensitized and internalized following phosphorylation and β-arrestin binding. Proteolytic cleavage of PAR2 results in the formation of a new amino terminus that acts like a tethered ligand by binding intramolecularly to receptor to trigger transmembrane signaling. Activated PAR2 also signals independently of G-proteins through its interaction with β-arrestins, which promotes sustained mitogen-activated protein kinase (MAPK) signaling, actin remodeling, and cell migration. PAR2 is profoundly localized in the vasculature, especially in endothelial cells, and is implicated in the control of vascular tone and homeostasis. Activation of endothelial PAR2 by endogenous serine protease or by PAR2-activating peptide (PAR2-APs, PAR2 agonist) causes vasodilation in vivo or isolated vessels mainly through nitric oxide (NO) and prostacyclin (PGI2) mechanisms (2).

PAR2 is also expressed in certain types of metastatic cancers and stimulates tumor cell migration and invasion. Vascular PAR2 expression is up-regulated by inflammatory cytokines such as tumor necrosis factor alpha (TNF-a). Increased TNF-α expression in type 2 diabetic coronary arterioles induces activation of reactive oxygen species (ROS), leading to endothelial dysfunction. PAR2 activation promotes cell proliferation in various cancer cell types including colon, gastric, cervical and pancreatic cancer cells. PAR2 agonists induce Cox-2 expression in lung cancer cells, MMP 2/9 production in prostate cancer cells and vascular endothelial growth factor secretion in breast cancer cells (3). PAR2 is also associated with renal cell carcinoma progression. PAR2 activation has been linked to cancer progression, especially metastasis and angiogenesis as well as pro-inflammatory and anti-inflammatory properties depending on the system. Proteases that are released during inflammation and injury cleave PAR2 on primary afferent neurons to cause neurogenic inflammation and hyperalgesia. PAR2-induced thermal hyperalgesia depends on sensitization of transient receptor potential vanilloid receptor 1 (TRPV1), which is gated by capsaicin, protons and noxious heat. PAR2-induced thermal hyperalgesia depends on sensitization of TRPV1 (4).

The PAR2 selective antibodies were generated against a synthetic peptide taken within amino acid region 300-370 on mouse PAR2 protein. The PAR2 synthetic peptide was covalently modified to achieve desired antigenic properties and was conjugated to a carrier protein before used as immunogen to raise antibodies in rabbits. The PAR2 antibodies are affinity purified over immobilized immunogenic peptide affinity matrix and stabilized with preservatives for long-term storage. Antigenic blocking peptide (P-PAR2) and western blot positive controls (PC-PAR2) are available. Antibodies can be conjugated to fluorophores or secondary enzymes upon request at nominal cost. For a complete listing of all FabGennix antibodies and lab services, please visit http://fabgennix.com.

References:

1. Trejo JoAnn,Ricks K Tiffany Phosphorylation of Protease-activated Receptor-2 Differentially Regulates Desensitization and Internalization J Biol Chem v.284(49); 2009
2. Park Y et al., Effect of PAR2 in regulating TNF-α and NAD(P)H oxidase in coronary arterioles in type 2 diabetic mice Basic Res Cardiol v.106; Jan 2011
3. Huang S et al., Proteinase-Activated Receptor 2 Expression in Breast Cancer and Its Role in Breast Cancer Cell Migration Oncogene V.28;August 2009
4. Bunnett N et al., Protease-activated receptor 2 sensitizes TRPV1 by protein kinase C- and A-dependent mechanisms in rats and mice J Physiol v.575;Sept1,2006

* For users who may require large amounts of the products listed above, please inquire about bulk material discounts.
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