SANTA CRUZ BIOTECHNOLOGY, INC.

PAR-4 (A-20): sc-21049

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Thrombin receptor (also designated protease-activated receptor-1 or PAR-1), PAR-2, PAR-3 and PAR-4 compose a distinct class of G protein-coupled receptors activated by proteolysis. Cleavage of these receptors by proteases occurs within the amino-terminal extracellular domain. Thrombin, a serine protease involved in platelet aggregation and blood coagulation, activates the thrombin receptor, resulting in elevated intracellular calcium levels in platelets. Thrombin also cleaves PAR-3 *in vitro,* suggesting that PAR-3 may be involved in thrombosis or mitogenesis. Thrombin receptor and PAR-4 appear to account for most thrombin signaling in platelets. Activation of PAR-2 *in vitro* is induced by trypsin, suggesting that PAR-2 is not an alternative thrombin receptor. Cytokines including TNF-α and IL-1β increase PAR-2 expression, indicating PAR-2 involvement in the acute inflammatory response.

REFERENCES

1. Santulli, R.J., et al. 1995. Evidence for the presence of a protease-activated receptor distinct from the thrombin receptor in human keratinocytes. Proc. Natl. Acad. Sci. USA 92: 9151-9155.
2. Lerner, D.J., et al. 1996. Agonist recognition by proteinase-activated receptor 2 and thrombin receptor. Importance of extracellular loop interactions for receptor function. J. Biol. Chem. 271: 13943-13947.
3. Nystedt, S., et al. 1996. The proteinase-activated receptor 2 is induced by inflammatory mediators in human endothelial cells. Comparison with the thrombin receptor. J. Biol. Chem. 271: 14910-14915.
4. Goldsack, N.R., et al. 1998. Thrombin. Int. J. Biochem. Cell Biol. 30: 641-646.
5. Xu, W.F., et al. 1998. Cloning and characterization of human protease-activated receptor 4. Proc. Natl. Acad. Sci. USA 95: 6642-6646.
6. Sullivan, R., et al. 1998. Analysis of a Ca^{2+}-activated K^{+} channel that mediates hyperpolarization via the thrombin receptor pathway. Am. J. Physiol. 275: C1342-C1348.
7. Schmidt, V.A., et al. 1998. The human proteinase-activated receptor-3 (PAR-3) gene. Identification within a Par gene cluster and characterization in vascular endothelial cells and platelets. J. Biol. Chem. 273: 15061-15068.
8. Kahn, M.L., et al. 1999. Protease-activated receptors 1 and 4 mediate activation of human platelets by thrombin. J. Clin. Invest. 103: 879-887.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: F2RL3 (human) mapping to 19p13.11; F2rl3 (mouse) mapping to 8 B3.3.

SOURCE

PAR-4 (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PAR-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21049 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

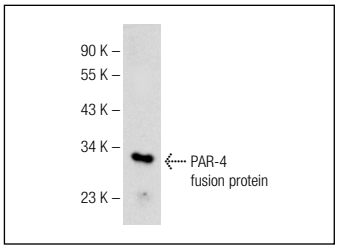
PAR-4 (A-20) is recommended for detection of PAR-4 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PAR-4 siRNA (h): sc-72068, PAR-4 siRNA (m): sc-72069, PAR-4 shRNA Plasmid (h): sc-72068-SH, PAR-4 shRNA Plasmid (m): sc-72069-SH, PAR-4 shRNA (h) Lentiviral Particles: sc-72068-V and PAR-4 shRNA (m) Lentiviral Particles: sc-72069-V.

Molecular Weight of PAR-4: 38 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, Daudi cell lysate: sc-2415 or NIH/3T3 whole cell lysate: sc-2210.

DATA



PAR-4 (A-20): sc-21049. Western blot analysis of human recombinant PAR-4 fusion protein.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.