SANTA CRUZ BIOTECHNOLOGY, INC.

PAR-3 (M-14): sc-22914

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The Power to Question

BACKGROUND

Thrombin receptor (also designated protease-activated receptor-1 or PAR-1), PAR-2 and PAR-3 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. Xu, W.F., et al. 1998. Cloning and characterization of human protease-activated receptor 4. Proc. Natl. Acad. Sci. USA 95: 6642-6646.
5. Goldsack, N.R., et al. 1998. Thrombin. Int. J. Biochem. Cell Biol. 30: 641-646.
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.

CHROMOSOMAL LOCATION

Genetic locus: F2RL2 (human) mapping to 5q13.3; F2rl2 (mouse) mapping to 13 D1.

SOURCE

PAR-3 (M-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of PAR-3 of human origin.

STORAGE

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

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-22914 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PAR-3 (M-14) is recommended for detection of PAR-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PAR-3 (M-14) is also recommended for detection of PAR-3 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PAR-3 siRNA (h): sc-37143, PAR-3 siRNA (m): sc-37144, PAR-3 shRNA Plasmid (h): sc-37143-SH, PAR-3 shRNA Plasmid (m): sc-37144-SH, PAR-3 shRNA (h) Lentiviral Particles: sc-37143-V and PAR-3 shRNA (m) Lentiviral Particles: sc-37144-V.

Molecular Weight of PAR-3: 43 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Udo, K., et al. 2010. Adipose tissue explants and MDCK cells reciprocally regulate their morphogenesis in coculture. Kidney Int. 78: 60-68.

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.v