SANTA CRUZ BIOTECHNOLOGY, INC.

PAR-2 (SAM11): sc-13504

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

Genetic locus: F2RL1 (human) mapping to 5q13.3; F2rl1 (mouse) mapping to 13 D1.

SOURCE

PAR-2 (SAM11) is a mouse monoclonal antibody raised against amino acids 37-50 of PAR-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for neutralization studies, sc-13504 L, 200 µg/0.1 ml.

PAR-2 (SAM11) is available conjugated to agarose (sc-13504 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-13504 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13504 PE), fluorescein (sc-13504 FITC), Alexa Fluor® 488 (sc-13504 AF488), Alexa Fluor® 546 (sc-13504 AF546), Alexa Fluor® 594 (sc-13504 AF594) or Alexa Fluor® 647 (sc-13504 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13504 AF680) or Alexa Fluor® 790 (sc-13504 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

PAR-2 (SAM11) is recommended for detection of PAR-2 of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

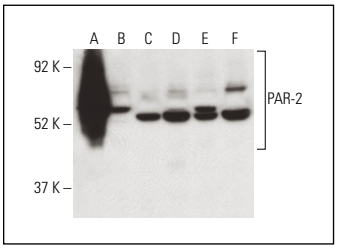
Suitable for use as control antibody for PAR-2 siRNA (h): sc-36188, PAR-2 siRNA (m): sc-36187, PAR-2 siRNA (r): sc-156080, PAR-2 shRNA Plasmid (h): sc-36188-SH, PAR-2 shRNA Plasmid (m): sc-36187-SH, PAR-2 shRNA Plasmid (r): sc-156080-SH, PAR-2 shRNA (h) Lentiviral Particles: sc-36188-V, PAR-2 shRNA (m) Lentiviral Particles: sc-36187-V and PAR-2 shRNA (r) Lentiviral Particles: sc-156080-V.

Molecular Weight (predicted) of PAR-2: 44 kDa.

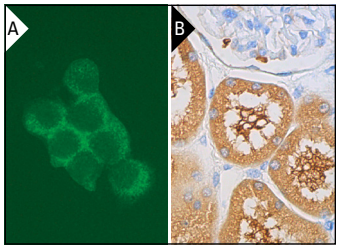
Molecular Weight (observed) of PAR-2: 50-100 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, WiDr cell lysate: sc-24779 or F9 cell lysate: sc-2245.

DATA



PAR-2 (SAM11): sc-13504. Western blot analysis of PAR-2 expression in Hep G2 (**A**), WiDr (**B**), NIH/3T3 (**C**), F9 (**D**), c4 (**E**) and 3611-RF (**F**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



PAR-2 (SAM11): sc-13504. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic and membrane staining (**A**). PAR-2 (SAM11) HRP: sc-13504 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Koo, B.H., et al. 2002. Factor Xa induces mitogenesis of coronary artery smooth muscle cell via activation of PAR-2. FEBS Lett. 523: 85-89.
2. Jiang, Y., et al. 2021. PAR-2 induces ovarian cancer cell motility by merging three signalling pathways to transactivate EGFR. Br. J. Pharmacol. 178: 913-932.
3. Nag, J.K., et al. 2022. PH-binding motif in PAR4 oncogene: from molecular mechanism to drug design. Mol. Cancer Ther. 21: 1415-1429.
4. Yakupu, A., et al. 2023. Single-cell analysis reveals melanocytes may promote inflammation in chronic wounds through cathepsin G. Front. Genet. 14: 1072995.

RESEARCH USE

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