

Rho A (F-1): sc-166399

BACKGROUND

The Ras p21 family of guanine nucleotide proteins has been widely studied in view of its apparent role in signal transduction pathways and high frequency of mutations in human malignancies. It is now clear, however, that the Ras proteins (H-, K- and N-Ras p21) are members of a much larger superfamily of related proteins. Six members of this family, Rap 1A, Rap 1B, Rap 2, R-Ras, Ral A and Ral B, exhibit approximately 50% amino acid homology to Ras. The six mammalian Rho proteins (Rho A, B, C, G, 7 and 8) are approximately 30% homologous to Ras and are expressed in a wide range of cell types. Both Ras p21 and Rho p21, as well as other members of the Ras superfamily, contain a carboxy-terminal CAAX sequence (C, cysteine; A, aliphatic amino acid; X, any amino acid) which in the case of Ras has been shown to be essential for correct localization and function.

CHROMOSOMAL LOCATION

Genetic locus: RHOA (human) mapping to 3p21.31, RHOC (human) mapping to 1p13.2; Rhoa (mouse) mapping to 9 F2, Rhoc (mouse) mapping to 3 F2.2.

SOURCE

Rho A (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 116-140 within an internal region of Rho A of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166399 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-166399 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Rho A (F-1) is recommended for detection of Rho A p21 and Rho C of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Rho A (F-1) is also recommended for detection of Rho A p21 and Rho C in additional species, including equine, canine, bovine, porcine and avian.

Rho A (F-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Rho A: 24 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, PC-12 cell lysate: sc-2250 or MCF7 whole cell lysate: sc-2206.

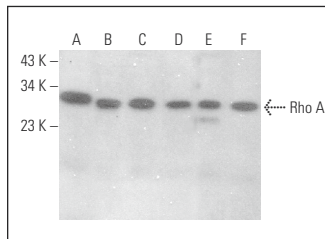
RESEARCH USE

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

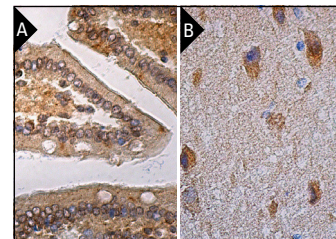
STORAGE

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

DATA



Rho A (F-1): sc-166399. Western blot analysis of Rho A expression in K-562 (A), HL-60 (B), MCF7 (C), Jurkat (D), SK-BR-3 (E) and PC-12 (F) whole cell lysates.



Rho A (F-1): sc-166399. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells (B).

SELECT PRODUCT CITATIONS

- Ongusaha, P.P., et al. 2008. Identification of ROCK1 as an upstream activator of the JIP-3 to JNK signaling axis in response to UVB damage. *Sci. Signal.* 1: ra14.
- Latreille, M., et al. 2012. Casein kinase 1γ2 impairs fibroblasts Actin stress fibers formation and delays cell cycle progression in G₁. *Int. J. Cell Biol.* 2012: 684684.
- Miyake, S., et al. 2015. Prolyl hydroxylase regulates axonal rewiring and motor recovery after traumatic brain injury. *Cell Death Dis.* 6: e1638.
- Kim, T.H. and Cho, S.G. 2017. Kisspeptin inhibits cancer growth and metastasis via activation of EIF2AK2. *Mol. Med. Rep.* 16: 7585-7590.
- Liu, J., et al. 2019. Induction of entosis in prostate cancer cells by nintedanib and its therapeutic implications. *Oncol. Lett.* 17: 3151-3162.
- Tsubaki, M., et al. 2019. Combination therapy with dacarbazine and statins improved the survival rate in mice with metastatic melanoma. *J. Cell. Physiol.* 234: 17975-17989.
- Tsubaki, M., et al. 2021. Rhosin suppressed tumor cell metastasis through inhibition of Rho/YAP pathway and expression of RHAMM and CXCR4 in melanoma and breast cancer cells. *Biomedicines* 9: 35.
- Xie, L., et al. 2021. MYO1B enhances colorectal cancer metastasis by promoting the F-actin rearrangement and focal adhesion assembly via RhoA/ROCK/FAK signaling. *Ann. Transl. Med.* 9: 1543.



See **Rho A (26C4): sc-418** for Rho A antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.