SANTA CRUZ BIOTECHNOLOGY, INC.

Actin (8.S2.1): sc-70319

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

All eukaryotic cells express Actin, which often constitutes as much as 50% of total cellular protein. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. While lower eukaryotes, such as yeast, have only one Actin gene, higher eukaryotes have several isoforms encoded by a family of genes. At least six types of Actin are present in mammalian tissues and fall into three classes. α-Actin expression is limited to various types of muscle, whereas β- and γ-Actin are the principle constituents of filaments in other tissues. Members of the small GTPase family regulate the organization of the Actin cytoskeleton. Rho controls the assembly of Actin stress fibers and focal adhesion, Rac regulates Actin filament accumulation at the plasma membrane and Cdc42 stimulates formation of filopodia.

REFERENCES

1. Doolittle, R.F. 1995. The origins and evolution of eukaryotic proteins. Philos. Trans. R. Soc. Lond., B, Biol. Sci. 349: 235-240.
2. Barkalow, K. and Hartwig, J.H. 1995. Actin cytoskeleton. Setting the pace of cell movement. Curr. Biol. 5: 1000-1002.

SOURCE

Actin (8.S2.1) is a mouse monoclonal antibody raised against monocytes and U-937 histolytic lymphoma of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Actin (8.S2.1) is available conjugated to either phycoerythrin (sc-70319 PE) or fluorescein (sc-70319 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

Actin (8.S2.1) is recommended for detection of Actin of mouse, rat, human and rabbit 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); non cross-reactive with the N-terminal 40 amino acids.

Suitable for use as control antibody for Actin siRNA (h): sc-29191, Actin siRNA (m): sc-29192, Actin shRNA Plasmid (h): sc-29191-SH, Actin shRNA Plasmid (m): sc-29192-SH, Actin shRNA (h) Lentiviral Particles: sc-29191-V and Actin shRNA (m) Lentiviral Particles: sc-29192-V.

Molecular Weight of Actin: 43 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, IMR-32 cell lysate: sc-2409 or KNRK whole cell lysate: sc-2214.

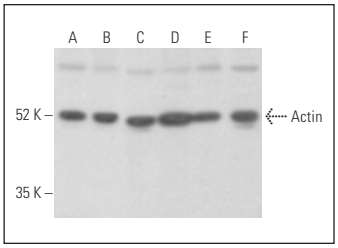
STORAGE

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

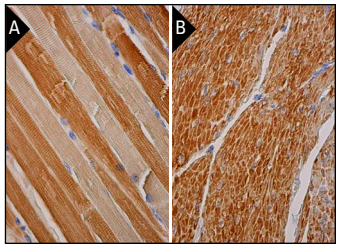
RESEARCH USE

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

DATA



Actin (8.S2.1): sc-70319. Western blot analysis of Actin expression in A-431 (**A**), SK-N-SH (**B**), KNRK (**C**), IMR-32 (**D**) and Raji (**E**) whole cell lysates and mouse liver tissue extract (**F**).



Actin (8.S2.1): sc-70319. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells (**B**).

SELECT PRODUCT CITATIONS

1. Xia, P. and Xu, X.Y. 2017. DKK3 attenuates the cytotoxic effect of natural killer cells on CD133+ gastric cancer cells. Mol. Carcinog. 56: 1712-1721.
2. Zhao, H., et al. 2017. Tangshen formula attenuates diabetic renal injuries by upregulating autophagy via inhibition of PLZF expression. PLoS ONE 12: e0171475.
3. Liu, X., et al. 2017. Hypothermia inhibits the proliferation of bone marrow-derived mesenchymal stem cells and increases tolerance to hypoxia by enhancing SUMOylation. Int. J. Mol. Med. 40: 1631-1638.
4. Xiao, X., et al. 2018. Effect of matrine against breast cancer by downregulating the vascular endothelial growth factor via the Wnt/β-catenin pathway. Oncol. Lett. 15: 1691-1697.
5. Liu, M., et al. 2018. Downregulation of liver-intestine cadherin enhances cisplatin-induced apoptosis in human gastric cancer BGC823 cells. Cancer Gene Ther. 25: 1-9.
6. Pan, P., et al. 2018. *Brucea javanica* seed oil enhances the radiosensitivity of esophageal cancer by inhibiting hypoxia-inducible factor 1α, *in vitro* and *in vivo*. Oncol. Lett. 15: 3870-3875.
7. Zhang, J., et al. 2018. Protective effects of 2,3,5,4-tetrahydroxystilbene-2-o-β-D-glucoside against osteoporosis: current knowledge and proposed mechanisms. Int. J. Rheum. Dis. 21: 1504-1513.
8. Ding, Q. and Zhu, H. 2018. Upregulation of PSMB8 and cathepsins in the human brains of dementia with Lewy bodies. Neurosci. Lett. 678: 131-137.
9. Zhou, R., et al. 2018. TGFBR1*6A is a potential modifier of migration and invasion in colorectal cancer cells. Oncol. Lett. 15: 3971-3976.

CONJUGATES

See **β-Actin (C4): sc-47778** for β-Actin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.