SANTA CRUZ BIOTECHNOLOGY, INC.

Actin (2Q1055): sc-58673

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-Actin 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. 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. Maccioni, R.B. and Cambiazo, V. 1995. Role of microtubule-associated proteins in the control of microtubule assembly. Physiol. Rev. 75: 835-864.
3. Schutt, C.E., et al. 1995. A discourse on modeling F-Actin. J. Struct. Biol. 115: 186-198.
4. Barkalow, K. and Hartwig, J.H. 1995. Actin cytoskeleton. Setting the pace of cell movement. Curr. Biol. 5: 1000-1002.

SOURCE

Actin (2Q1055) is a mouse monoclonal antibody raised against purified gizzard Actin of chicken origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Actin (2Q1055) is recommended for detection of Actin of mouse, rat, human and avian 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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: Sol8 cell lysate: sc-2249, A-431 whole cell lysate: sc-2201 or SK-N-SH cell lysate: sc-2410.

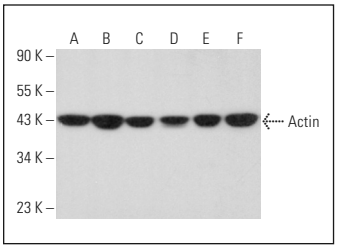
RESEARCH USE

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

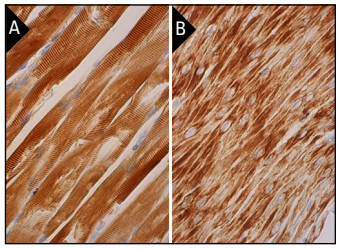
STORAGE

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

DATA



Actin (2Q1055): sc-58673. Western blot analysis of Actin expression in HL-60 (**A**), Sol8 (**B**), HeLa (**C**), C32 (**D**), A-431 (**E**) and SK-N-SH (**F**) whole cell lysates.



Actin (2Q1055): sc-58673. 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. Weir, L., et al. 2011. Hypoxia-mediated control of HIF/ARNT machinery in epidermal keratinocytes. Biochim. Biophys. Acta 1813: 60-72.
2. Steinecke, A., et al. 2014. EphA/ephrin A reverse signaling promotes the migration of cortical interneurons from the medial ganglionic eminence. Development 141: 460-471.
3. Gely-Pernot, A., et al. 2015. Retinoic acid receptors control spermatogonia cell-fate and induce expression of the SALL4A transcription factor. PLoS Genet. 11: e1005501.
4. Swift, L.H. and Golsteyn, R.M. 2016. Cytotoxic amounts of cisplatin induce either checkpoint adaptation or apoptosis in a concentration dependent manner in cancer cells. Biol. Cell 108: 127-148.
5. Chen, X.J., et al. 2017. JNK signaling is required for the MIP-1α-associated regulation of Kupffer cells in the heat stroke response. Mol. Med. Rep. 16: 2389-2396.
6. Yang, N., et al. 2018. MicroRNA-206 regulates the epithelial-mesenchymal transition and inhibits the invasion and metastasis of prostate cancer cells by targeting Annexin A2. Oncol. Lett. 15: 8295-8302.
7. Li, Q., et al. 2019. Downregulation of microRNA-451 improves cell migration, invasion and tube formation in hypoxia-treated HUVECs by targeting MIF. Mol. Med. Rep. 20: 1167-1177.
8. Yang, J., et al. 2020. ADAM10 and ADAM17 proteases mediate proinflammatory cytokine-induced and constitutive cleavage of endomucin from the endothelial surface. J. Biol. Chem. 295: 6641-6651.

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.