SANTA CRUZ BIOTECHNOLOGY, INC.

α-Actin (0.N.5): sc-58669

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.

CHROMOSOMAL LOCATION

Genetic locus: ACTA2 (human) mapping to 10q23.31; Acta2 (mouse) mapping to 19 C1.

SOURCE

α-Actin (0.N.5) is a mouse monoclonal antibody raised against an N-terminal decapeptide of smooth muscle α-Actin 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.

APPLICATIONS

α-Actin (0.N.5) is recommended for detection of smooth muscle α-Actin 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with Actin from fibroblasts (β-and γ-cytoplasmic), myocardium (α-myocardial), and striated muscle (α-sarcomeric).

α-Actin (0.N.5) is also recommended for detection of smooth muscle α-Actin in additional species, including bovine.

Suitable for use as control antibody for ACTA2 siRNA (h): sc-43590, ACTA2 siRNA (m): sc-43591, ACTA2 shRNA Plasmid (h): sc-43590-SH, ACTA2 shRNA Plasmid (m): sc-43591-SH, ACTA2 shRNA (h) Lentiviral Particles: sc-43590-V and ACTA2 shRNA (m) Lentiviral Particles: sc-43591-V.

Molecular Weight of α-Actin: 43 kDa.

Positive Controls: A-10 cell lysate: sc-3806, L6 whole cell lysate: sc-364196 or AN3 CA cell lysate: sc-24662.

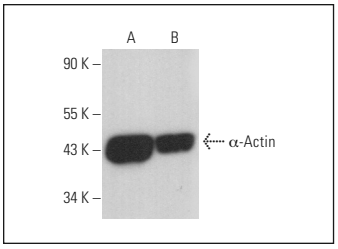
STORAGE

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

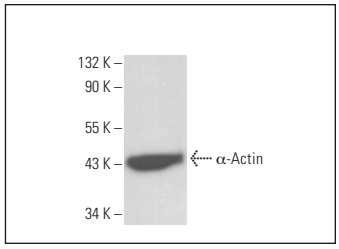
RESEARCH USE

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

DATA



α-Actin (0.N.5): sc-58669. Western blot analysis of α-Actin expression in A-10 (**A**) and L6 (**B**) whole cell lysates.



α-Actin (0.N.5): sc-58669. Western blot analysis of α-Actin expression in AN3 CA whole cell lysate.

SELECT PRODUCT CITATIONS

1. Layman, H., et al. 2009. Co-delivery of FGF-2 and G-CSF from gelatin-based hydrogels as angiogenic therapy in a murine critical limb ischemic model. Acta Biomater. 5: 230-239.
2. Shen, J., et al. 2011. Arterial injury promotes medial chondrogenesis in Sm22 knockout mice. Cardiovasc. Res. 90: 28-37.
3. Han, Y.F., et al. 2011. Evidence that endogenous hydrogen sulfide exerts an excitatory effect on gastric motility in mice. Eur. J. Pharmacol. 673: 85-95.
4. Gupta, G.K., et al. 2012. Decreased expression of vitamin D receptors in neointimal lesions following coronary artery angioplasty in atherosclerotic swine. PLoS ONE 7: e42789.
5. Gilbert, E.R., et al. 2013. Positioning ganglioside D3 as an immunotherapeutic target in lymphangioleiomyomatosis. Am. J. Pathol. 183: 226-234.
6. Kin, K., et al. 2014. Immunohistological study of the endometrial stromal fibroblasts in the opossum, *Monodelphis domestica:* evidence for homology with eutherian stromal fibroblasts. Biol. Reprod. 90: 111.
7. Bhatt, S.R., et al. 2014. Vascular oxidative stress upregulates angiotensin II type I receptors via mechanisms involving nuclear factor κ B. Clin. Exp. Hypertens. 36: 367-373.
8. Prpar, M.S., et al. 2014. Lineage-specific markers of goat mammary cells in primary culture. In Vitro Cell. Dev. Biol. Anim. 50: 926-936.
9. Altınsoy, C., et al. 2014. Effect of induced hypothermia on lipopolysaccharide-induced lung injury in neonatal rats. J. Matern. Fetal. Neonatal. Med. 27: 421-429.
10. Bhatnagar, I. and Kim, S.K. 2015. Gliotoxin from *Aspergillus fumigatus* reverses epithelial to mesenchymal transition: implications in renal fibrosis. Int. J. Med. Microbiol. 305: 11-19.

See **α-Actin (1A4): sc-32251** for α-Actin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.