

β-Actin (AC-15): sc-69879

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 and Cdc42 stimulates formation of filopodia.

CHROMOSOMAL LOCATION

Genetic locus: ACTB (human) mapping to 7p22.1; Actb (mouse) mapping to 5 G2.

SOURCE

β-Actin (AC-15) is a mouse monoclonal antibody raised against a slightly modified synthetic peptide corresponding to cytoplasmic β-Actin.

PRODUCT

Each vial contains 100 μg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β-Actin (AC-15) is recommended for detection of β-Actin of broad species 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for detection of adult cardiac and skeletal muscle actins or detection in *Dictyostelium discoideum*.

Suitable for use as control antibody for β-Actin siRNA (h): sc-108069, β-Actin siRNA (m): sc-108070, β-Actin shRNA Plasmid (h): sc-108069-SH, β-Actin shRNA Plasmid (m): sc-108070-SH, β-Actin shRNA (h) Lentiviral Particles: sc-108069-V and β-Actin shRNA (m) Lentiviral Particles: sc-108070-V.

Molecular Weight of β-Actin: 43 kDa.

Molecular Weight of β-Actin C-terminal region: 15 kDa.

Positive Controls: A-10 cell lysate: sc-3806, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

RESEARCH USE

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

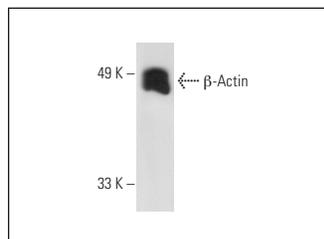
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

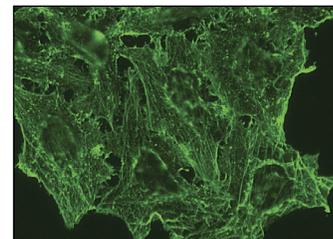
STORAGE

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

DATA



β-Actin (AC-15): sc-69879. Western blot analysis of β-Actin expression in A-10 whole cell lysate.



β-Actin (AC-15): sc-69879. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

- Grundstrom, S., et al. 2004. Bcl-3 and NFκB p50-p50 homodimers act as transcriptional repressors in tolerant CD4⁺ T cells. *J. Biol. Chem.* 279: 8460-8468.
- Lee, J.T., et al. 2013. RFP-mediated ubiquitination of PTEN modulates its effect on AKT activation. *Cell Res.* 23: 552-564.
- Cai, F., et al. 2014. Human RAD6 promotes G₁-S transition and cell proliferation through upregulation of cyclin D1 expression. *PLoS ONE* 9: e113727.
- Wagenaar, T.R., et al. 2015. Identification of the endosomal sorting complex required for transport-I (ESCRT-I) as an important modulator of anti-miR uptake by cancer cells. *Nucleic Acids Res.* 43: 1204-1215.
- Cassimere, E.K., et al. 2016. p27^{Kip1} is required to mediate a G₁ cell cycle arrest downstream of Atm following genotoxic stress. *PLoS ONE* 11: e0162806.
- Weissbein, U., et al. 2017. Culture-induced recurrent epigenetic aberrations in human pluripotent stem cells. *PLoS Genet.* 13: e1006979.
- Avolio, R., et al. 2018. Protein syndesmos is a novel RNA-binding protein that regulates primary cilia formation. *Nucleic Acids Res.* 46: 12067-12086.
- Fu, L., et al. 2019. Up-regulation of FOXD1 by YAP alleviates senescence and osteoarthritis. *PLoS Biol.* 17: e3000201.
- Chew, N.J., et al. 2020. FGFR3 signaling and function in triple negative breast cancer. *Cell Commun. Signal.* 18: 13.
- Zhang, Y., et al. 2021. Occludin degradation makes brain microvascular endothelial cells more vulnerable to reperfusion injury *in vitro*. *J. Neurochem.* 156: 352-366.

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.