

Actin (C-11): sc-1615

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 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. Phil. Trans. Royal Soc. London Biol. Sci. 349: 235-240.
2. Maccioni, R.B., et al. 1995. Role of microtubule-associated proteins in the control of microtubule assembly. Physiol. Rev. 75: 835-864.

CHROMOSOMAL LOCATION

Genetic locus: ACTB (human) mapping to 7p12; Actb (mouse) mapping to 5 G2.

SOURCE

Actin (C-11) is available as either goat (sc-1615) or rabbit (sc-1615-R) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of Actin of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1615 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for ChIP application, sc-1615 X, 200 μ g/0.1 ml.

Available as agarose conjugate for immunoprecipitation, sc-1615 AC, 500 μ g/0.25 ml agarose in 1 ml.

Available as HRP conjugate for Western blotting, sc-1615 HRP, 200 μ g/1 ml.

Available as rhodamine (sc-1615 TRITC) conjugate for immunofluorescence, 200 μ g/1 ml.

Available as phycoerythrin (sc-1615 PE) or fluorescein (sc-1615 FITC) conjugates for flow cytometry, 100 tests.

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.

APPLICATIONS

Actin (C-11) is recommended for detection of a broad range of Actin isoforms of mouse, rat, human, zebrafish, *C. elegans*, *S. cerevisiae* and *Xenopus* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

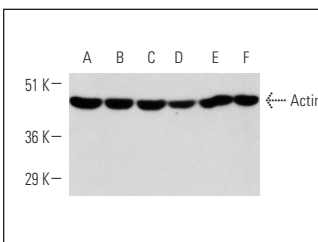
Suitable for use as control antibody for Actin siRNA (h): sc-29191 and Actin siRNA (m): sc-29192.

Actin (C-11) X TransCruz antibody is recommended for ChIP assays.

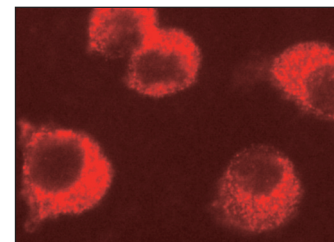
Molecular Weight of Actin: 43 kDa.

Positive Controls: C32 whole cell lysate: sc-2205, BC3H1 cell lysate: sc-2299 or Sol8 cell lysate: sc-2249.

DATA



Actin (C-11): sc-1615. Western blot analysis of Actin expression in C32 (A), BC3H1 (B), Sol8 (C), HeLa (D), KNRK (E) and NIH/3T3 (F) whole cell lysates.



Actin (C-11): sc-1615. Immunofluorescence staining of methanol-fixed KNRK cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Klejman, A., et al. 2002. The Src family kinase Hck couples Bcr/ABL to Stat5 activation in myeloid leukemia cells. EMBO J. 21: 5766-5774.
2. Murray, S.A., et al. 2003. IGF-1 activates p21 to inhibit UV-induced cell death. Oncogene 22: 1703-1711.
3. Lane, A.A., et al. 2003. Neutrophil elastase cleaves PML-RAR α and is important for the development of acute promyelocytic leukemia in mice. Cell 115: 305-318.
4. Wei, W., et al. 2004. Degradation of the SCF component Skp2 in cell-cycle phase G₁ by the anaphase-promoting complex. Nature 428: 194-198.
5. Panta, G.R., et al. 2004. ATM and the catalytic subunit of DNA-dependent protein kinase activate NF κ B through a common MEK/extracellular signal-regulated kinase/p90Rsk signaling pathway in response to distinct forms of DNA damage. Mol. Cell Biol. 24: 1823-1835.
6. Kirmizis A, et al. 2004. Silencing of human polycomb target genes is associated with methylation of Histone H3 Lys 27. Genes Dev. 18: 1592-1605.
7. Juang, H.H. 2004. Nitroprusside stimulates mitochondrial aconitase gene expression through the cyclic adenosine 3',5'-monophosphate signal transduction pathway in human prostate carcinoma cells. Prostate 61: 92-102.