

Smooth Muscle Actin (B4): sc-53142

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. 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. Cdc42 stimulates formation of filopodia.

SOURCE

Smooth Muscle Actin (B4) is a mouse monoclonal antibody raised against gizzard Actin of chicken origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Smooth Muscle Actin (B4) is available conjugated to agarose (sc-53142 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53142 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53142 PE), fluorescein (sc-53142 FITC), Alexa Fluor[®] 488 (sc-53142 AF488), Alexa Fluor[®] 546 (sc-53142 AF546), Alexa Fluor[®] 594 (sc-53142 AF594) or Alexa Fluor[®] 647 (sc-53142 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53142 AF680) or Alexa Fluor[®] 790 (sc-53142 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Smooth Muscle Actin (B4) is recommended for detection of enteric smooth muscle γ -Actin and, to a lesser extent, α -smooth muscle, α -skeletal and α -cardiac (sarcomeric) isoforms of Actin of mouse, rat, human and chicken 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with cytoplasmic Actins.

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.

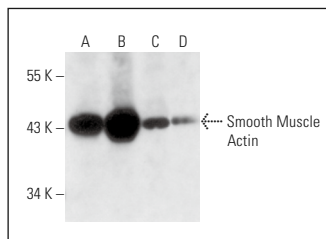
Molecular Weight of Smooth Muscle Actin: 43 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, C32 whole cell lysate: sc-2205 or A-10 cell lysate: sc-3806.

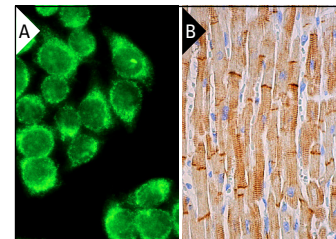
STORAGE

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

DATA



Smooth Muscle Actin (B4): sc-53142. Western blot analysis of Smooth Muscle Actin expression in HISM (A), A-10 (B), HeLa (C) and C32 (D) whole cell lysates.



Smooth Muscle Actin (B4): sc-53142. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and intercalated disc staining of myocytes. Blocked with 0.25X UltraCruz[®] Blocking Reagent: sc-516214. Detection reagents used: m-IgGκ BP-B: sc-516142 and ImmunoCruz[®] ABC Kit: sc-516216 (B).

SELECT PRODUCT CITATIONS

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- Breikaa, R.M., et al. 2013. Multimechanistic antifibrotic effect of biochanin a in rats: implications of proinflammatory and profibrogenic mediators. *PLoS ONE* 8: e69276.
- Dinardo, C.L., et al. 2014. Variation of mechanical properties and quantitative proteomics of VSMC along the arterial tree. *Am. J. Physiol. Heart Circ. Physiol.* 306: H505-H516.
- Tian, L., et al. 2015. Galectin-3-induced oxidized low-density lipoprotein promotes the phenotypic transformation of vascular smooth muscle cells. *Mol. Med. Rep.* 12: 4995-5002.
- Lee, Y.S., et al. 2016. Crosstalk between CCL7 and CCR3 promotes metastasis of colon cancer cells via ERK-JNK signaling pathways. *Oncotarget* 7: 36842-36853.
- Guan, S., et al. 2017. Frizzled-7 mediates TGF- β -induced pulmonary fibrosis by transmitting non-canonical Wnt signaling. *Exp. Cell Res.* 359: 226-234.
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- Li, H., et al. 2019. MicroRNA-320 targeting neuropilin 1 inhibits proliferation and migration of vascular smooth muscle cells and neointimal formation. *Int. J. Med. Sci.* 16: 106-114.
- Wang, X., et al. 2020. Roseotoxin B alleviates cholestatic liver fibrosis through inhibiting PDGF-B/PDGFR- β pathway in hepatic stellate cells. *Cell Death Dis.* 11: 458.

RESEARCH USE

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