**α-Actin (1A4): sc-32251**

**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. Rac regulates Actin filament accumulation at the plasma membrane and Cdc42 stimulates formation of filopodia.

**CHROMOSOMAL LOCATION**

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

**SOURCE**

α-Actin (1A4) 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 IgG2a kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

α-Actin (1A4) is available conjugated to agarose (sc-32251 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32251 HRP), 200 μg/ml, for WB, IHC(PO) and ELISA; to either phycoerythrin (sc-32251 PE), fluorescein (sc-32251 FITC), Alexa Fluor® 488 (sc-32251 AF488), Alexa Fluor® 546 (sc-32251 AF546), Alexa Fluor® 594 (sc-32251 AF594) or Alexa Fluor® 647 (sc-32251 AF647), 200 μg/ml, for WB (RGB), IF, IHCP and FCM; and to either Alexa Fluor® 880 (sc-32251 AF880) or Alexa Fluor® 790 (sc-32251 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA.

**APPLICATIONS**

α-Actin (1A4) 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 α-Actin of human origin.

Suitable for use as control antibody for ACTA2 siRNA (h): sc-43259, 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.

**STORAGE**

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

**DATA**

α-Actin (1A4) HRP: sc-32251 HRP. Direct western blot analysis of α-Actin expression in C2C12 (A), 10T1/2 (B), NIH3T3 (C), EC-Hy (D) and Sox8 (E) whole cell lysates and human heart tissue extract (F).

α-Actin (1A4): sc-32251. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic and cytoskeletal staining of smooth muscle cells.

**SELECT PRODUCT CITATIONS**


**RESEARCH USE**

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