

ACTA2 (h): 293 Lysate: sc-111833

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 of Actin encoded by a family of genes. At least six types of Actin are present in mammalian tissues and fall into three classes, designated α -Actin, β -Actin and γ -Actin. ACTA2 (Actin, α 2, smooth muscle, aorta) is a 377 amino acid protein that localizes to the cytoplasm and the cytoskeleton and is involved in cell motility and structural integrity. Defects in the gene encoding ACTA2 are the cause of aortic aneurysm familial thoracic type 6 (AAT6), a permanent dilation of the aorta that results in a loss of smooth muscle cells and a fragmentation of elastic fibers.

REFERENCES

1. Doolittle, R.F. 1995. The origins and evolution of eukaryotic proteins. *Philos. Trans. R. Soc. Lond., B, 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.
3. Schutt, C.E., et al. 1995. A discourse on modeling F-Actin. *J. Struct. Biol.* 115: 186-198.
4. Barkalow, K., et al. 1995. Actin cytoskeleton. Setting the pace of cell movement. *Curr. Biol.* 5: 1000-1002.
5. Nobes, C.D., et al. 1995. Rho, Rac, and Cdc42 GTPases regulate the assembly of multimolecular focal complexes associated with Actin stress fibers, lamellipodia and filopodia. *Cell* 81: 53-62.

CHROMOSOMAL LOCATION

Genetic locus: ACTA2 (human) mapping to 10q23.3.

PRODUCT

ACTA2 (h): 293 Lysate represents a lysate of human ACTA2 transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

ACTA2 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive ACTA2 antibodies. Recommended use: 10-20 μ l per lane.

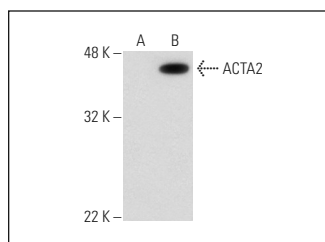
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

α -Actin (a-SM1): sc-130616 is recommended as a positive control antibody for Western Blot analysis of enhanced human ACTA2 expression in ACTA2 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

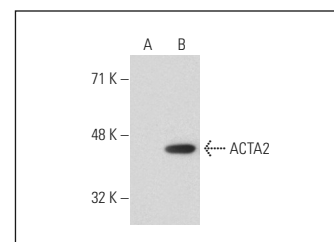
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



α -Actin (a-SM1): sc-130616. Western blot analysis of ACTA2 expression in non-transfected: sc-110760 (A) and human ACTA2 transfected: sc-111833 (B) 293 whole cell lysates.



α -Actin (alpha-SM1): sc-130617. Western blot analysis of ACTA2 expression in non-transfected: sc-110760 (A) and human ACTA2 transfected: sc-111833 (B) 293 whole cell lysates.

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.