SANTA CRUZ BIOTECHNOLOGY, INC.

α-actinin (H-300): sc-15335

BACKGROUND

The spectrin gene family encodes a diverse group of cytoskeletal proteins that include spectrins, dystrophins and α-actinins. There are four tissue-specific α-actinins, namely α-actinin-1, α-actinin-2, α-actinin-3 and α-actinin-4, which are localized to muscle and non-muscle cells, including skeletal, cardiac and smooth muscle cells, as well as within the cytoskeleton. Each α-actinin protein contains one actin-binding domain, two calponin-homology domains, two EF-hand domains and four spectrin repeats, through which they function as bundling proteins that can cross-link F-actin, thus anchoring actin to a variety of intracellular structures. Defects in the gene encoding α-actinin-4 are the cause of focal segmental glomerulosclerosis 1 (FSGS1), a common renal lesion characterized by decreasing kidney function and, ultimately, renal failure.

REFERENCES

1. Burridge, K., et al. 1988. Focal adhesions: transmembrane junctions between the extracellular matrix and the cytoskeleton. Annu. Rev. Cell Biol. 4: 487-525.
2. Gilmore, A.P., et al. 1992. Further characterization of the talin-binding site in the cytoskeletal protein vinculin. J. Cell Sci. 103: 719-731.

SOURCE

α-actinin (H-300) is a rabbit polyclonal antibody raised against amino acids 593-892 mapping at the C-terminus of α-actinin-1 of human origin.

PRODUCT

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

APPLICATIONS

α-actinin (H-300) is recommended for detection of α-actinin-1, α-actinin-2, α-actinin-3 and α-actinin-4 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).

α-actinin (H-300) is also recommended for detection of α-actinin-1, α-actinin-2, α-actinin-3 and α-actinin-4 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of α-actinin: 100 kDa.

Positive Controls: A-673 cell lysate: sc-2414, SJRH30 cell lysate: sc-2287 or NIH/3T3 whole cell lysate: sc-2210.

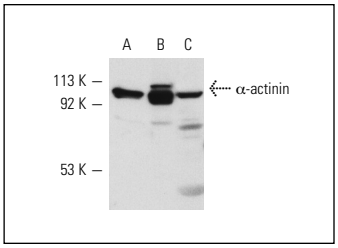
STORAGE

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

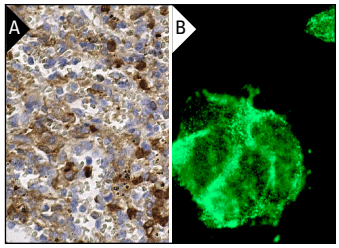
RESEARCH USE

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

DATA



α-actinin (H-300): sc-15335. Western blot analysis of α-actinin expression in A-673 (**A**) and SJRH30 (**B**) whole cell lysates and rat skeletal muscle extract (**C**).



α-actinin (H-300): sc-15335. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and nuclear staining of cells in red pulp (**A**). Immunofluorescence staining of methanol-fixed A-673 cells showing cytoplasmic staining (**B**).

SELECT PRODUCT CITATIONS

1. Asada, M., et al. 2003. ADIP, a novel Afadin- and α-actinin-binding protein localized at cell-cell adherens junctions. J. Biol. Chem. 278: 4103-4111.
2. Coghill, I.D., et al. 2003. FHL3 is an actin-binding protein that regulates α-actinin-mediated actin bundling: FHL3 localizes to actin stress fibers and enhances cell spreading and stress fiber disassembly. J. Biol. Chem. 278: 24139-24152.
3. Muraoka, R.S., et al. 2003. Increased malignancy of Neu-induced mammary tumors overexpressing active transforming growth factor β1. Mol. Cell. Biol. 23: 8691-703.
4. Shao, H., et al. 2010. α-actinin-4 is essential for maintaining the spreading, motility and contractility of fibroblasts. PLoS ONE 5: e13921.
5. Baucum, A.J., et al. 2010. Identification and validation of novel spinophilin-associated proteins in rodent striatum using an enhanced *ex vivo* shotgun proteomics approach. Mol. Cell. Proteomics 9: 1243-1259.
6. Garzón, B., et al. 2010. A biotinylated analog of the anti-proliferative prostaglandin A1 allows assessment of PPAR-independent effects and identification of novel cellular targets for covalent modification. Chem. Biol. Interact. 183: 212-221.
7 Wyss, H.M., et al. 2011. Biophysical properties of normal and diseased renal glomeruli. Am. J. Physiol. Cell Physiol. 300: C397-C405.