SANTA CRUZ BIOTECHNOLOGY, INC.

α-actinin (C-20)-R: sc-7454-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Youssoufian, H., et al. 1990. Cloning and chromosomal localization of the human cytoskeletal α-actinin gene reveals linkage to the β-spectrin gene. Am. J. Hum. Genet. 47: 62-71.
2. Nishiyama, M., et al. 1990. Expression of human α-actinin in human hepatocellular carcinoma. Cancer Res. 50: 6291-6294.
3. Yürüker, B. and Niggli, V. 1992. α-actinin and vinculin in human neutrophils: reorganization during adhesion and relation to the actin network. J. Cell Sci. 101: 403-414.

SOURCE

α-actinin (C-20)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of α-actinin 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.

Blocking peptide available for competition studies, sc-7454 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

α-actinin (C-20)-R is recommended for detection of α-actinin-1, α-actinin-2, α-actinin-4 and, to a lesser extent, α-actinin-3 of mouse, rat, human and *Drosophila melanogaster* 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 (C-20)-R is also recommended for detection of α-actinin-1, α-actinin-2, α-actinin-4 and, to a lesser extent, α-actinin-3 in additional species, including equine, canine, bovine, porcine and avian.

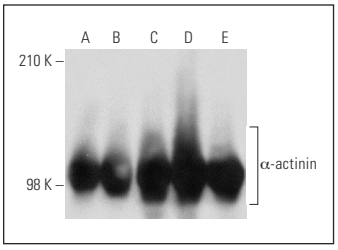
Molecular Weight of α-actinin: 100 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or Sol8 cell lysate: sc-2249.

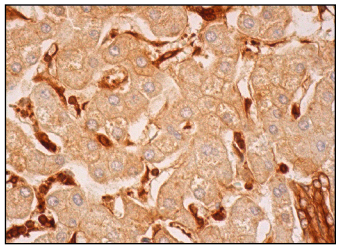
STORAGE

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

DATA



α-actinin (C-20): sc-7454. Western blot analysis of α-actinin expression in HeLa (**A**), K-562 (**B**), L8 (**C**), Sol8 (**D**) and 3T3-L1 (**E**) whole cell lysates.



α-actinin (C-20)-R: sc-7454-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic and membrane staining of hepatocytes and bile duct cells and cytoplasmic and nuclear staining of hepatic sinusoids.

SELECT PRODUCT CITATIONS

1. Sato, K., et al. 2004. Degradation of fodrin by µ-calpain in fibroblasts adhering to fibrillar collagen I gel. J. Biochem. 136: 777-785.
2. Moretti, R.M., et al. 2007. Clusterin isoforms differentially affect growth and motility of prostate cells: possible implications in prostate tumorigenesis. Cancer Res. 67: 10325-10333.
3. Maccarone, R., et al. 2008. Saffron supplement maintains morphology and function after exposure to damaging light in mammalian retina. Invest. Ophthalmol. Vis. Sci. 49: 1254-1261.
4. Chan, B. and Sukhatme, V.P. 2009. Suppression of Tie-1 in endothelial cells *in vitro* induces a change in the genome-wide expression profile reflecting an inflammatory function. FEBS Lett. 583: 1023-1028.
5. Tichy, E.D., et al. 2010. Mouse embryonic stem cells, but not somatic cells, predominantly use homologous recombination to repair double-strand DNA breaks. Stem Cells Dev. 19: 1699-1711.
6. Gopal, S., et al. 2010. Heparan sulfate chain valency controls syndecan-4 function in cell adhesion. J. Biol. Chem. 285: 14247-14258.
7. Karki, R., et al. 2011. The MARCH family E3 ubiquitin ligase K5 alters monocyte metabolism and proliferation through receptor tyrosine kinase modulation. PLoS Pathog. 7: e1001331.

RESEARCH USE

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