

α -actinin (B-12): sc-166524

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: 62-72.
2. Nishiyama, M., et al. 1990. Expression of human α -actinin in human hepatocellular carcinoma. *Cancer Res.* 50: 6291-6294.

SOURCE

α -actinin (B-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 861-891 at the C-terminus of α -actinin of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166524 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

α -actinin (B-12) is recommended for detection of α -actinin-1, α -actinin-2 and α -actinin-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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).

Molecular Weight of α -actinin: 100 kDa.

Positive Controls: A-673 cell lysate: sc-2414, Sol8 cell lysate: sc-2249 or A-10 cell lysate: sc-3806.

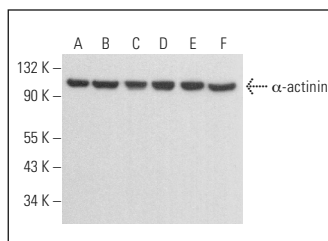
STORAGE

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

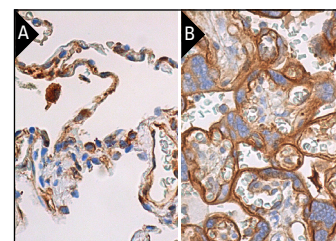
RESEARCH USE

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

DATA




α -actinin (B-12): sc-166524. Western blot analysis of α -actinin expression in A-673 (A), MDA-MB-231 (B), C2C12 (C), Sol8 (D) and A-10 (E) whole cell lysates and rat skeletal muscle tissue extract (F).



α -actinin (B-12): sc-166524. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing cytoplasmic staining of pneumocytes and macrophages (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane staining of trophoblastic cells (B).

SELECT PRODUCT CITATIONS

1. Serini, S., et al. 2011. Docosahexaenoic acid reverts resistance to UV-induced apoptosis in human keratinocytes: involvement of Cox-2 and HuR. *J. Nutr. Biochem.* 22: 874-885.
2. Fasano, E., et al. 2012. DHA induces apoptosis by altering the expression and cellular location of GRP78 in colon cancer cell lines. *Biochim. Biophys. Acta* 1822: 1762-1772.
3. Pandey, A.K., et al. 2015. TIP60-miR-22 axis as a prognostic marker of breast cancer progression. *Oncotarget* 6: 41290-41306.
4. Subbaiah, V.K., et al. 2016. E3 ligase EDD1/UBR5 is utilized by the HPV E6 oncogene to destabilize tumor suppressor TIP60. *Oncogene* 35: 2062-2074.
5. Rajagopalan, D., et al. 2017. TIP60 represses telomerase expression by inhibiting Sp1 binding to the TERT promoter. *PLoS Pathog.* 13: e1006681.
6. Rajagopalan, D., et al. 2018. TIP60 represses activation of endogenous retroviral elements. *Nucleic Acids Res.* 46: 9456-9470.
7. Lim, J., et al. 2019. Kazinol U inhibits melanogenesis through the inhibition of tyrosinase-related proteins via AMP kinase activation. *Br. J. Pharmacol.* 176: 737-750.
8. Serini, S., et al. 2020. The combination of sulforaphane and Fernblock[®] XP improves individual beneficial effects in normal and neoplastic human skin cell lines. *Nutrients* 12: 1608.
9. Oh, E.J., et al. 2021. Extracellular vesicles derived from fibroblasts promote wound healing by optimizing fibroblast and endothelial cellular functions. *Stem Cells* 39: 266-279.



See **α -actinin (H-2): sc-17829** for α -actinin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.