

α -actinin-4 (A-8): sc-393495

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.

CHROMOSOMAL LOCATION

Genetic locus: ACTN4 (human) mapping to 19q13.2; Actn4 (mouse) mapping to 7 A3.

SOURCE

α -actinin-4 (A-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-22 at the N-terminus of α -actinin-4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

α -actinin-4 (A-8) is available conjugated to agarose (sc-393495 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393495 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393495 PE), fluorescein (sc-393495 FITC), Alexa Fluor[®] 488 (sc-393495 AF488), Alexa Fluor[®] 546 (sc-393495 AF546), Alexa Fluor[®] 594 (sc-393495 AF594) or Alexa Fluor[®] 647 (sc-393495 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393495 AF680) or Alexa Fluor[®] 790 (sc-393495 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393495 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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.

APPLICATIONS

α -actinin-4 (A-8) is recommended for detection of 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).

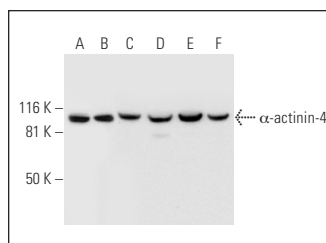
α -actinin-4 (A-8) is also recommended for detection of α -actinin-4 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for α -actinin-4 siRNA (h): sc-43101, α -actinin-4 siRNA (m): sc-43102, α -actinin-4 shRNA Plasmid (h): sc-43101-SH, α -actinin-4 shRNA Plasmid (m): sc-43102-SH, α -actinin-4 shRNA (h) Lentiviral Particles: sc-43101-V and α -actinin-4 shRNA (m) Lentiviral Particles: sc-43102-V.

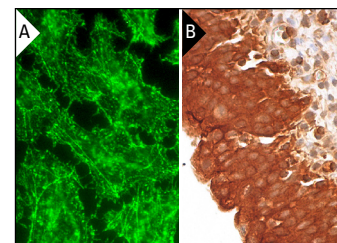
Molecular Weight of α -actinin-4: 105 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-673 cell lysate: sc-2414 or MCF7 whole cell lysate: sc-2206.

DATA



α -actinin-4 (A-8): sc-393495. Western blot analysis of α -actinin-4 expression in HeLa (A), A-673 (B), MCF7 (C), SJRH30 (D), K-562 (E) and A-431 (F) whole cell lysates.



α -actinin-4 (A-8): sc-393495. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic and nuclear staining of urothelial cells (B).

SELECT PRODUCT CITATIONS

1. Rao, J., et al. 2017. Advillin acts upstream of phospholipase C ϵ 1 in steroid-resistant nephrotic syndrome. *J. Clin. Invest.* 127: 4257-4269.
2. Kemp, J.P. and Briehner, W.M. 2018. The Actin filament bundling protein α -actinin-4 actually suppresses actin stress fibers by permitting Actin turnover. *J. Biol. Chem.* 293: 14520-14533.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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