

# $\alpha$ -actinin (N-19): sc-7453



The Power to Question

## BACKGROUND

The spectrin gene family encodes a diverse group of cytoskeletal proteins that include spectrins, dystrophins and  $\alpha$ -actinins. There are four tissue-specific  $\alpha$ -actinins, namely  $\alpha$ -actinin-1,  $\alpha$ -actinin-2,  $\alpha$ -actinin-3 and  $\alpha$ -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  $\alpha$ -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  $\alpha$ -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. Yousoufian, H., et al. 1990. Cloning and chromosomal localization of the human cytoskeletal  $\alpha$ -actinin gene reveals linkage to the spectrin  $\beta$  gene. *Am. J. Hum. Genet.* 47: 62-71.
2. Nishiyama, M., et al. 1990. Expression of human  $\alpha$ -actinin in human hepatocellular carcinoma. *Cancer Res.* 50: 6291-6294.

## SOURCE

$\alpha$ -actinin (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of  $\alpha$ -actinin of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7453 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

$\alpha$ -actinin (N-19) is recommended for detection of  $\alpha$ -actinin-1,  $\alpha$ -actinin-2,  $\alpha$ -actinin-3,  $\alpha$ -actinin-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

$\alpha$ -actinin (N-19) is also recommended for detection of  $\alpha$ -actinin-1,  $\alpha$ -actinin-2,  $\alpha$ -actinin-3,  $\alpha$ -actinin-4 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of  $\alpha$ -actinin: 100 kDa.

Positive Controls:  $\alpha$ -actinin-2 (h2): 293T Lysate: sc-116257, K-562 whole cell lysate: sc-2203 or A-673 cell lysate: sc-2414.

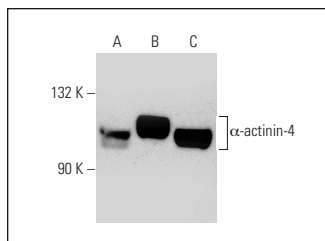
## STORAGE

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

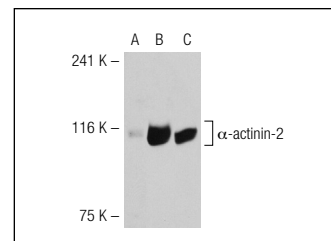
## RESEARCH USE

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

## DATA



$\alpha$ -actinin (N-19): sc-7453. Western blot analysis of  $\alpha$ -actinin-4 expression in non-transfected 293T: sc-117752 (A), human  $\alpha$ -actinin-4 transfected 293T: sc-176210 (B) and A-673 (C) whole cell lysates.



$\alpha$ -actinin (N-19): sc-7453. Western blot analysis of  $\alpha$ -actinin-2 expression in non-transfected 293T: sc-117752 (A), human  $\alpha$ -actinin-2 transfected 293T: sc-116257 (B) and K-562 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Thuerauf, D.J., et al. 2001. Sarco/endoplasmic reticulum calcium ATPase-2 expression is regulated by ATF6 during the endoplasmic reticulum stress response: intracellular signaling of calcium stress in a cardiac myocyte model system. *J. Biol. Chem.* 276: 48309-48317.
2. Lee, N.P., et al. 2004. Zyxin, axin, and Wiskott-Aldrich syndrome protein are adaptors that link the cadherin/catenin protein complex to the cytoskeleton at adherens junctions in the seminiferous epithelium of the rat testis. *J. Androl.* 25: 200-215.
3. Shiels, B.R., et al. 2004. A *Theileria annulata* DNA binding protein localized to the host cell nucleus alters the phenotype of a bovine macrophage cell line. *Eukaryot. Cell* 3: 495-505.
4. Bouhamdan, M., et al. 2006. Brain-specific regulator of G-protein signaling 9-2 selectively interacts with  $\alpha$ -actinin-2 to regulate calcium-dependent inactivation of NMDA receptors. *J. Neurosci.* 26: 2522-2530.
5. Wang, C.Q., et al. 2007. Coxsackie and adenovirus receptor (CAR) is a product of Sertoli and germ cells in rat testes which is localized at the Sertoli-Sertoli and Sertoli-germ cell interface. *Exp. Cell Res.* 313: 1373-1392.
6. Meng, X., et al. 2012. C7L family of poxvirus host range genes inhibits antiviral activities induced by type I interferons and interferon regulatory factor 1. *J. Virol.* 86: 4538-4547.
7. Qian, X., et al. 2013. Palladin is a regulator of actin filament bundles at the ectoplasmic specialization in adult rat testes. *Endocrinology* 154: 1907-1920.

**MONOS**  
Satisfaction  
Guaranteed

Try  **$\alpha$ -actinin (H-2): sc-17829** or  **$\alpha$ -actinin (B-12): sc-166524**, our highly recommended monoclonal alternatives to  $\alpha$ -actinin (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see  **$\alpha$ -actinin (H-2): sc-17829**.