Qty: 100 µg/400 µL

Rabbit anti-α-Actinin-4 (N-term)

Catalog No. 42-1400

Lot No.

Rabbit anti-α-Actinin-4 (N-term)

FORM
This polyclonal antibody is supplied as a 400 µL aliquot at a concentration of 0.25 mg/mL in phosphate buffered saline (pH 7.4) containing 0.1% sodium azide. This antibody is epitope-affinity purified from rabbit antiserum.

PAD: ZMD.534

IMMUNOGEN
Synthetic peptide derived from the N-terminal region of the human, mouse, and orangutan α-Actinin-4 protein

SPECIFICITY
This antibody is specific for the α-Actinin-4 protein (non-muscle α-Actinin-4, ACTN4) protein. On Western blots, it identifies the target band at ~105 kDa.

REACTIVITY
Reactivity has been confirmed with mouse liver homogenates by Western blotting and with mouse heart and liver tissues by immunofluorescence .

Sample	Western Blotting	Immuno-fluorescence
Mouse	+++	+++
Human	ND	ND
Orangutan	ND	ND

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

USAGE
Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 1 µg/mL
Immunofluorescence: 2-4 µg/mL

STORAGE
Store at 2-8°C for up to one month. Store at –20°C for long-term storage. Avoid repeated freezing and thawing.

(cont'd)

BACKGROUND

α-Actinins belong to the spectrin gene superfamily which represents a diverse group of cytoskeletal proteins, including the α- and β-spectrins and dystrophins. α-Actinin is an actin-binding protein with multiple roles in different cell types. In nonmuscle cells, the cytoskeletal isoform is found along microfilament bundles and adherens-type junctions, where it is involved in binding actin to the membrane.[1] In contrast, skeletal, cardiac, and smooth muscle isoforms are localized to the Z-disc and analogous dense bodies, where they help anchor the myofibrillar actin filaments.[2]

α-Actinin-4 (non-muscle α-Actinin-4, ACTN4) is a ubiquitous protein which exists as a homodimer and colocalizes with actin stress fibers. This protein is both nuclear and cytoplasmic. The cytoplasmic localization of α-Actinin-4 was closely associated with an infiltrative histological phenotype and correlated significantly with a poorer prognosis in 61 cases of breast cancer.[2] The levels of this protein was also increased in 75% of the cases of colorectal cancer and it actively increases cell motility and promotes lymph node metastasis of this cancer type.[3] The role of α-Actinin-4 as a tumor suppressor is also indicated in studies in which a mutated protein was discovered in lung carcinoma cell line and is dispersed in the cytoplasm rather than actin cytoskeleton.[4] It was unable to inhibit tumor cell growth *in vitro* and *in vivo*, however.

α-Actinin-4 knock-out mice studies demonstrated that it is required for normal glomerular function and is involved in the regulation of cell movement.[5] Defects in α-Actinin-4 are the cause of focal segmental glomerulosclerosis 1 (fsgs1).[6] Fsgs1 is a common renal lesion characterized by increased urinary protein excretion and decreasing kidney function. α-Actinin-4 is also part of a complex which is responsible for transferrin receptor recycling.[7]

REFERENCES

1. El-Husseini AE, et al. *Biochem Biophys Res Commun* 267(3):906-911, 2000.
2. Honda K, et al. *J Cell Biol* 140(6):1383-1393, 1998.
3. Honda K, et al. *Gastroenterology* 128(1):51-62, 2005.
4. Menez J, et al. *Oncogene* 23(15):2630-2639, 2004.
5. Kos CH, et al. *J Clin Invest* 111(11):1683-1690, 2003.
6. Kaplan JM, et al. *Nat Genet* 24(3):251-256, 2000.
7. Yan Q, et al. *Mol Biol Cell* 16(5):2470-2482, 2005.

RELATED PRODUCTS

Product	*Conjugate*	*Cat. No.*
Protein A	Sepharose® 4B	10-1041
rec-Protein G	Sepharose® 4B	10-1241

Conjugate	ZyMAX™ Goat x Rabbit IgG (H+L)	ZyMAX™ Goat x Mouse IgG (H+L)
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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