

Rabbit Polyclonal Anti-Phospho-alpha Actinin 4 antibody (S159)

Catalog Number: PACTN4-440AP

Lot Number:

General Information

Product	Phospho-alpha Actinin 4 Antibody
Accession #	Uniprot: O43707 NCBI: NP_004915
Verified Applications	ELISA, IP, WB
Species Cross Reactivity	Human, Monkey, Mouse, Rat
Host	Rabbit
Immunogen	Synthetic phospho-peptide, corresponding to a region within amino acid regions 140-190 of Human alpha Actinin 4 conjugated to a carrier protein.
Alternative Nomenclature	actinin 4 antibody, ACTN4 antibody, DKFZp686K23158 antibody, F actin cross linking protein antibody, FSGS1 antibody, Non-muscle alpha-actinin 4 antibody

Physical Properties

Quantity	100 µg
Volume	200 µl
Form	Affinity Purified Immunoglobulins
Immunoglobulin & Concentration	0.62 mg/ml IgG in antibody stabilization buffer
Storage	Store at -20°C for long term storage.

Recommended Dilutions

DOT Blot	1:10,000
ELISA	1:10,000
Immunoprecipitation	1:200
Western Blot	1:500

Related Products

	Catalog #
BIOTIN-Conjugated	PACTN4-BIOTIN
FITC-Conjugated	PACTN4-FITC
Antigenic Blocking Peptide	P-PACTN4
Western Blot Positive Control	PC-PACTN4

Overview:

Alpha actinins are known for their ability to modulate cytoskeletal organization and cell motility by cross-linking actin filaments. There are several actin binding proteins including MACF1, alpha actinins, Cofilin, Fascin and Elongation factor 1 Alpha 2 working in concert for cell viability, migration, and proliferation. Alpha actinins belong to a Spectrin gene superfamily that represents a wide range of cytoskeletal proteins including alpha and beta Spectrin and dystrophins. The alpha actinins play different role in different type of cells. In non-muscle cells, this protein is found along the microfilament boundless and adherens-type junctions. Alpha actinins are involved in binding of actin to the membrane. In muscle cells (skeletal, cardiac, and smooth muscle isoforms) the protein is localized in z-disc and along the dense bodies where they anchor the myofibrillar actin filaments.

Alpha Actinin 4 is a non-muscle isoform that is concentrated in the cytoplasm and is involved in the metastatic processes. It is essential for maintaining the spreading, motility, and contractility of fibroblasts (2). Mutations in this gene are associated with glomerulosclerosis and other kidney dysfunctions (1). The Actinin 4 gene is localized on chromosome 19q13. The protein has several functional motifs including, Calponin homology domain, PIP2 binding site, actin binding domain, calcium binding domain and several spectrin repeats. Alpha-actinin 4 has a putative phosphorylation site at Serine 159. Actinin 4 is phosphorylated by growth factor stimulation and upon phosphorylation its affinity for actin is reduced. The levels of Alpha Actinin 4 significantly increased in advanced and metastatic human ovarian carcinoma leading to increased invasion and motility of ovarian cancer cells.

The phospho-specific alpha-Actinin 4 selective antibodies were generated using a synthetic peptide selected from a region between amino acids 140-190 containing phospho-serine 159. The phospho-alpha Actinin 4 antibodies are affinity purified over immobilized phospho and non-phospho-antigen based affinity chromatography. The alpha Actinin 4 antibodies were further purified on antigen based affinity chromatography to reduce the background labeling of proteins, these Ig are stabilized for long-term storage. The purified immunoglobulins are stabilized in antibody stabilization buffer for long-term storage. Antigenic blocking peptides (P-PACTN4) and western blot positive control (PC-PACTN4) in ready to use SDS-sample buffer are available. Antibodies can be conjugated to fluorophores and other secondary enzymes upon request at nominal cost. For a complete listing of all antibodies and lab services, please visit <http://fabgennix.com>.

References:

1. Mathis BJ, Kim SH, Calabrese K, Haas M, Seidman JG, Seidman CE, Pollak MR. A locus for inherited focal segmental glomerulosclerosis maps to chromosome 19q13. *Kidney Int.* 1998 Feb;53(2):282-6.
2. Hanshuang Shao, James H.-C. Wang, Martin R. Pollak, and Alan Wells. α -Actinin-4 Is Essential for Maintaining the Spreading, Motility and Contractility of Fibroblasts. *PLoS One.* 2010; 5(11): e13921.
3. Maria V. Barbolina,1 Brian P. Adley, David L. Kelly, Angela J. Fought, Denise Scholtens, Lonnie D. Shea, and M. Sharon Stack. Motility Related Actinin Alpha-4 Is Associated with Advanced and Metastatic Ovarian Carcinoma. *Lab Invest.* 2008 June; 88(6): 602–614.

* For users who may require large amounts of the products listed above, please inquire about bulk material discounts.
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