

## Rabbit Polyclonal Anti-alpha Actinin 4 antibody

Catalog Number: ACTN4-401AP

Lot Number:

### General Information

<b>Product</b>	alpha Actinin 4 Antibody
<b>Accession #</b>	Uniprot: O43707 NCBI: NP_004915
<b>Verified Applications</b>	ELISA, IP, WB
<b>Species Cross Reactivity</b>	Human, Monkey, Mouse, Rat
<b>Host</b>	Rabbit
<b>Immunogen</b>	Synthetic peptide taken within amino acid region 140-190 on human Alpha Actinin 4 protein.
<b>Alternative Nomenclature</b>	actinin 4 antibody, ACTN4 antibody, F actin cross linking protein antibody, Focal segmental glomerulosclerosis 1 antibody, FSGS 1 antibody, Non muscle alpha actinin 4 antibody

### Physical Properties

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

### Recommended Dilutions

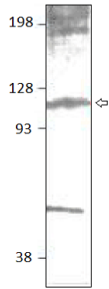
<b>DOT Blot</b>	1:10,000
<b>ELISA</b>	1:10,000
<b>Immunoprecipitation</b>	1:200
<b>Western Blot</b>	1:500

### Related Products

### Catalog #

<b>BIOTIN-Conjugated</b>	ACTN4-BIOTIN
<b>FITC-Conjugated</b>	ACTN4-FITC
<b>Antigenic Blocking Peptide</b>	P-ACTN4
<b>Western Blot Positive Control</b>	PC-ACTN4

## Application Verification:



WB of ACTN-401AP with NIH3T3 cells. 1:500 antibody dilution in DiluOBuffer. Apparent MW 120 kDa.

Dilutions are for reference only. Applications not listed above are not necessarily precluded from working with this antibody. Investigators intending to use an application that has not been verified can request a complimentary sample.

## 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 Alpha-Actinin 4 selective antibodies were generated using a peptide selected from a region between amino acids 140-190. The alpha Actinin 4 antibodies are affinity purified over immobilized antigen based affinity chromatography, and the purified immunoglobulins are stabilized in antibody stabilization buffer for long-term storage. Antigenic blocking peptides (P-ACTN4) and western blot positive control (PC-ACTN4) in ready to use SDS-sample buffer are available. Primary antibody ACTN4-401AP labels a ~120 kDa protein in PC-ACTN4 samples and several other tissues. 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.  $\alpha$ -Actinin-4 Is Essential for Maintaining the Spreading, Motility and Contractility of Fibroblasts. *PLoS One.* 2010; 5(11): e13921.
3. Maria V. Barbolina, 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.  
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.