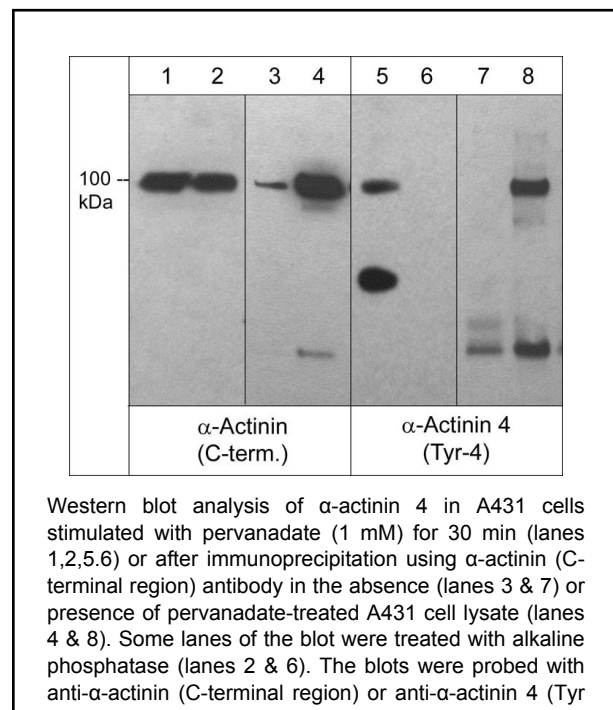


Background

α -Actinins are widely expressed cytoskeletal proteins that cross-link actin filaments through anti-parallel homodimers of the rod domains. Four α -actinin genes have been discovered in humans with α -actinin 1 and 4 being widely expressed in non-muscle cells. α -Actinins contain three conserved domains that include an N-terminal actin binding domain, four spectrin-like repeats in the central region, and a C-terminal calmodulin binding domain. α -Actinin cross-links the actin filament networks and associates the network to focal adhesion sites through binding of talin and vinculin. α -Actinin 1 is phosphorylated at Tyr-12 by FAK, while α -actinin 4 can be phosphorylated at Tyr-4 and Tyr-31 after EGF treatment. Tyr-4 and Tyr-31 phosphorylation inhibit actin binding and reduces actin-filament driven multi-nucleation in rat kidney cells. Thus, phosphorylation in α -actinins may be important for regulating actin binding and actin cytoskeletal remodeling.

Background References

Izaguirre, G. et al. (2001) *J Biol Chem.* 276(31):28676.
 Ylanne et al. (2001) *Structure.* 9:597.
 Shao, H. et al. (2010) *J Biol Chem.* 285(4):2591.



Applications

WB 1:1000
 ELISA 1:2000

Species Reactivity

Hu, Rt, Ms

Specificity

The antibody detects a 100 kDa* protein corresponding to the molecular mass of α -actinin 4 on SDS-PAGE immunoblots of human A431 cells treated with pervanadate, but is not observed after alkaline phosphatase treatment.

End user should determine optimal dilution for their particular applications and experiments.
 Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

Immunogen

Uniprot ID: O43707

Phospho- α -actinin 4 (Tyr-4) synthetic peptide (coupled to carrier protein) corresponding to amino acids in the N-terminus of human α -actinin 4. This sequence is well conserved in rat and mouse α -actinin 4, but is not conserved in other α -actinins.

Buffer and Storage

Rabbit polyclonal, affinity-purified antibody is supplied in 100 μ l phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20° C. Stable for 1 year.

Related Products

AK6060 Actin & Tubulin Antibody Sampler Kit
 AP4271 α -Actinin 4 (a.a. 2-11) Rabbit Polyclonal
 AK6480 α -Actinin 4 Phospho-Regulation Antibody Sampler Kit
 AX4275 α -Actinin 4 (a.a. 2-11) Blocking Peptide
 AX4245 Phospho- α -Actinin 4 (Tyr-4) Blocking Peptide

Product References

Kojima, S. et al. (2014) *Am J Nephrol.* 39(1):36-45
 WB: human kidney cells

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