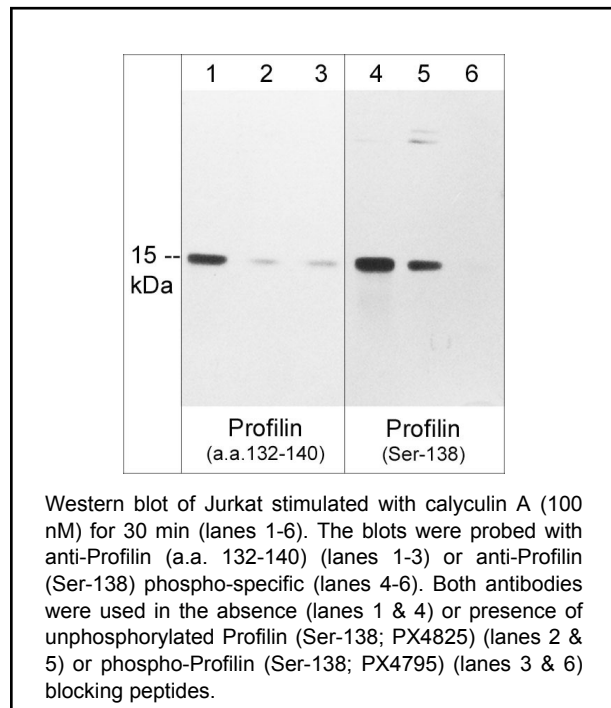


Background

Profilins are small actin-binding proteins that have functions in cell motility, cytokinesis, gene transcription, endocytosis and neuronal plasticity. Four profilin isoforms have been identified in mammals. Profilin-1 (PFN1) and profilin-2a (PFN2a) isoforms are highly conserved in structure, but PFN1 is ubiquitously expressed while PFN2a is preferentially enriched in brain. In addition, there are two testis-specific profilins, PFN3 and PFN4, that significantly differ in primary sequence and function compared to PFN1 and PFN2a. Profilin is phosphorylated at both tyrosine and serine residues *in vivo*. Tyr-129 is phosphorylated in response to VEGF-A stimulation, and this promotes profilin actin binding and polymerization. Tyr-129 phosphorylation may be important for angiogenesis induced by injuries. Ser-138 is phosphorylated by ROCK and dephosphorylated by PP1. This serine phosphorylation inhibits G-actin binding, as well as decreases profilin's aggregation suppressor activity by inhibiting binding to huntingtin. Thus, Tyr-129 phosphorylation may activate while Ser-138 phosphorylation may inhibit profilin activity.

Background References

- Shao, J. et al. (2008) Mol Cell Biol. 28(17):5196.
Shao, J. & Diamond, M.I. (2012) PLoS ONE 7(3): e32802.
Fan, Y. et al. (2012) Nat Cell Biol. 14(10):1046.



Applications

Blocking 1:1000
ELISA 50 ng/well

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.

Specificity

The peptide is specifically recognized by anti-Profilin (Ser-138) phospho-specific antibody (PP4791) in ELISA, and has been shown to block the reactivity of PP4791 during Western blot. In addition, the peptide is recommended for use in blocking PP4791 reactivity in immunocytochemistry.

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

Peptide Sequence

Phospho-Profilin (Ser-138) synthetic peptide includes amino acids surrounding Ser-138 in human Profilin-1. This sequence is well conserved in rat and mouse Profilin-1. The serine site has some homology to the conserved site (Ser-138) in Profilin-2a and Profilin-2b, but the site is not conserved in Profilin-3 and Profilin-4.

Buffer and Storage

Blocking Peptide is supplied in 50µl phosphate-buffered saline and 0.05% sodium azide.
Store at -20°C. Stable for 1 year.

Related Products

- AK6060 Actin & Tubulin Antibody Sampler Kit
PP4821 Profilin (a.a. 132-140) Rabbit Polyclonal
PP4791 Profilin (Ser-138), phospho-specific Rabbit Polyclonal
PP4801 Profilin (a.a. 126-137) Rabbit Polyclonal
PP4751 Profilin (Tyr-129), phospho-specific Rabbit Polyclonal

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