

phospho-Akt (Thr-34) Blocking Peptide

Background:

Akt, also known as Protein Kinase B (PKB) and Rac (Related to the A and C kinases), is a 60kDa serine/threonine kinase critical for controlling diverse cellular functions, including glucose metabolism, gene transcription, cell proliferation, and apoptosis. Akt phosphorylates a number of physiological substrates including MBP, glycogen synthetase, PKA RII subunit, and histone H1. Akt is activated in response to insulin and growth factors in a PI3-kinase dependent manner. Activation of PI3-Kinase generates phosphatidylinositol 3,4-bisphosphate which may induce the membrane translocation of Akt coincident with its phosphorylation and activation. Upon activation, Akt associates with members of the PKC family of kinases, such as PKC δ and PKC ζ . Ceramide-activated PKC ζ leads to phosphorylation of the Akt-Pleckstrin Homology (PH) domain on threonine 34. This phosphorylation inhibits PIP₃ binding to Akt, preventing activation of the kinase by insulin. Since Akt confers a prosurvival signal and regulates pathways in response to insulin, suppressing its activation may be one mechanism by which ceramide promotes cell death and induces insulin resistance.

References:

Jones, P.F. et al. (1991) Proc. Natl. Acad. Sci. USA 88:4171-4175.
Marte, B. & Downward. J. (1997) TIBS. 22:355-358.
Powell, D.J. et al. (2003) Mol. Cell Biol. 23:7794-7808.

Peptide Sequence:

Phospho-Akt (Thr-34) synthetic peptide corresponds to amino acid residues around threonine 34 of human Akt. This sequence is highly conserved in rat and mouse Akt.

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.

Applications:

Antibody Blocking 1 µg/ml¹
ELISA 10-100 ng/well²

End user should determine optimal concentration dependent on the concentration of the antibody.

¹Recommended for blocking antibody reactivity in Western blot and immunocytochemistry.

²Established in 96-well Nunc immunoplates where peptide was bound to plates for 2 hrs in 0.1 M sodium carbonate buffer, pH 8.5.

Specificity:

The peptide is specifically recognized by anti-Akt (Thr-34) phospho-specific antibody (AP1001) in ELISA, and is recommended for use in blocking AP1271 reactivity in Western blot and immunocytochemistry.

Related Products:

AP1001 Akt (Thr-34), phospho-specific Rabbit Polyclonal

AM1011 Akt1 (N-terminal Region) Mouse Monoclonal

AM1141 Akt (Ser-473), phospho-specific Mouse Monoclonal

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