

Synthetic Akt Substrate Peptide

Catalog No. CSI13610 **Quantity:** 1.0 mg

Description: The synthetic peptide RPRAATF can be used as a substrate for AKT/PKB in in vitro kinase assays. It is phosphorylated by AKT1/PKB α with a K_m of 25 μ M. Protein kinase B or Akt (PKB/Akt) is a serine/threonine kinase, which in mammals comprises three highly homologous members known as PKB α , PKB β , and PKB γ (AKT3). AKT/PKB is activated in cells exposed to diverse stimuli such as hormones, growth factors, and extracellular matrix components. The activation mechanism remains to be fully characterised but occurs downstream of phosphoinositide 3-kinase (PI 3K). PI-3K generates phosphatidylinositol-3,4,5-trisphosphate (PIP(3)), lipid second messenger essential for the translocation of PKB/Akt to the plasma membrane where it is phosphorylated and activated by phosphoinositide-dependent kinase-1 (PDK-1) and possibly other kinases. PKB/Akt phosphorylates and regulates the function of many cellular proteins involved in processes that include metabolism, apoptosis, and proliferation. Recent evidence indicates that PKB/Akt is frequently constitutively active in many types of human cancer.

Akt1 contains a region homologous to a pleckstrin domain found in multiple signaling molecules and is stimulated by a number of receptor tyrosine kinases, including receptors for IGF, NGF, PDGF, VEGF, angiotensin, and insulin, by the action of phosphatidylinositol 3-kinase (PI 3-kinase).

Molecular Weight: 818 g/mol.

Formulation: Supplied as lyophilized powder.

Purity: 85-90% by HPLC.

Sequence: RPRAATF

Reconstitution: Reconstitution in 3 ml dd H₂O results in a 400 μ M solution recommended for AKT1/PKB α activity assays.

Storage & Stability: Stable for 1 year in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles.**

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