



DB059: Akt1 (C20)

Background:

Akt1, also known as Protein kinase B, is a serine/threonine kinase that is at the center of many signal transduction pathways. Akt1 regulates glucose metabolism, transcription, apoptosis, cell proliferation, angiogenesis, and cell motility (1). The activation of Akt1 occurs downstream of PI-3K, which upon activation by an extracellular molecule, generates PIP (3) (2). PIP (3) is a lipid second messenger that promotes the translocation of Akt1 to the plasma membrane via PH (pleckstrin-homology) domain binding (2-4). At the plasma membrane Akt1 is phosphorylated and activated by PDK-1 at its catalytic site on residue Thr308 (1). Residue Ser473 is also phosphorylated at this time but the kinase has not yet been identified (1). In this activated form Akt1 phosphorylates proteins that contain the motif, R-x-R-x-x-S/T-F/L, at the plasma membrane, in the cytosol, and in the nucleus (1). In addition to its kinase activity, Akt1 forms complexes with other proteins that are not substrates. These other proteins act as modulators of Akt1 activity (1).

Origin:

Akt1 (C20) is provided as an affinity purified rabbit polyclonal antibody, raised against a synthetic peptide mapping to the carboxy terminal domain of human Akt1.

Product Details:

Each vial contains 200 µg/ml of affinity purified rabbit IgG Akt1 (C20) *DB059*, in 1 ml PBS containing 0.1 % sodium azide and 0.2% gelatin.

Competition Studies:

A blocking peptide is also available, *DB059P*, for use in competition studies. Each vial contains 100 µg of peptide in 0.5 ml PBS with 0.1% sodium azide and 100 µg BSA.

Specificity:

Akt1 (C20) reacts with Akt1 of mouse, rat, and human origin by western blotting, immunoprecipitation, and immunohistochemistry. Suggested western blotting starting dilution is at 1:200.

Storage:

Store this product at 4° C, do not freeze. The product is stable for one year from the date of shipment.

References:

1. Brazil DP, Park J, Hemmings BA. 2002. PKB binding proteins. Getting in on the Akt. Cell 111 (3):293-303.
2. Nicholson KM, Anderson NG. 2002. The protein kinase B/Akt signalling pathway in human malignancy. Cell Signal 14(5): 381-395.
3. Marte BM, Downward J. 1997. PKB/Akt: connecting phosphoinositide 3-kinase to cell survival and beyond. Trends Biochem Sci 22(9): 355-358.
4. Coffey PJ, Jin J, Woodgett JR. 1998. Protein kinase B (c-Akt): a multifunctional mediator of phosphatidylinositol 3-kinase activation. Biochem J. 335(Pt1): 1-13.