Technical Data Sheet

Purified Mouse Anti-Akt (pS472/pS473)

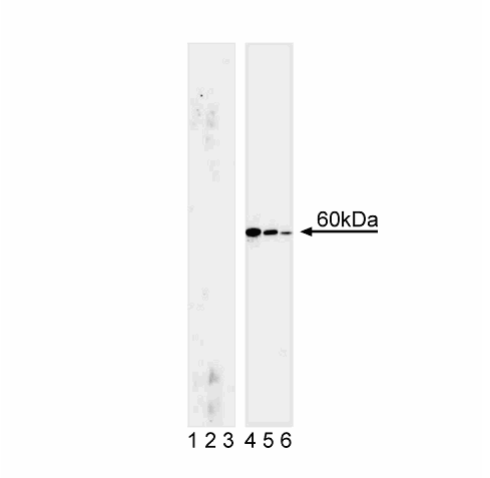
Product Information

Material Number:	**550747**
Alternate Name:	Akt1, Akt2, Akt3, PKBα, PKBβ, PKBγ, RAC-PKα, RAC-PKβ, RAC-PKγ, STK-2
Size:	50 µg
Concentration:	0.5 mg/ml
Clone:	104A282
Immunogen:	Phosphorylated Human Akt1 (pS473) Peptide
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Mouse Tested in Development: Human, Rat
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

Akt [also known as PKB (Protein kinase B) or RAC-PK (Related to the A and C kinases)] is a family of serine/threonine kinases that contains a pleckstrin-homology (PH) domain. PH domains play important roles in signal transduction. There are three known isoforms of Akt in mammalian cells [Akt1 (α), Akt2 (β) and Akt3 (γ)]; they are thought to be regulated similarly. Akt is activated by insulin and growth factors by a mechanism involving phosphoinositide 3-OH kinase. Phosphoinositide 3-OH kinases products bind to the pleckstrin homology domain resulting in translocation of Akt to the plasma membrane and activation of Akt to phospho-Akt by upstream kinases. Akt is phosphorylated within the activation loop at threonine 308 and the C-terminus at serine 473. Phospho-Akt promotes cell survival by inhibiting apoptosis. Specifically, phospho-Akt1 has been shown to phosphorylate Bad, a member of the Bcl-2 family that promotes cell death. This phosphorylation results in the inactivation of the proapoptotic function of Bad. The Akt molecule is thus considered to link extracellular survival signals (growth factors) with the apoptotic machinery (Bad). Akt is also a key mediator of the metabolic effects of insulin. Additionally, Akt has been referred to as an oncogene because it has increased activity in a number of tumors.

The 104A282 antibody recognizes Akt1 phosphorylated at S473 and Akt3 phosphorylated at S472. This antibody may also recognize Akt2 when phosphorylated at S474.



Western blot analysis for Akt (pS472/pS473). *Serum-starved NIH/3T3 cells (Mouse embryo fibroblast cells; ATCC CRL-1658) were either left untreated (lanes 1-3) or stimulated with 10 ng/ml PDGF for 6 minutes (lanes 4-6). Blots were probed with the mouse anti-Akt (pS472/pS473) antibody at concentrations of 2 µg/mL (lanes 1, 4), 1 µg/mL (lanes 2, 5), and 0.5 µg/mL (lanes 3, 6). Note that the mouse anti-Akt (pS472/pS473) antibody recognized Akt in PDGF-treated cells (lanes 4-6), but not in untreated cells (lanes 1-3). Akt is identifiable as a band of ~60 kDa.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at 4°C.

Application Notes

Application

Western blot	Routinely Tested
Immunoprecipitation	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Alessi DR, Andjelkovic M, Caudwell B, et al. Mechanism of activation of protein kinase B by insulin and IGF-1. *EMBO J.* 1996; 15(23):6541-6551.(Biology)

Cantley LC, Neel BG. New insights into tumor suppression: PTEN suppresses tumor formation by restraining the phosphoinositide 3-kinase/AKT pathway. *Proc Natl Acad Sci U S A.* 1999; 96(8):4240-4245.(Biology)

Ferrigno P, Silver PA. Regulated nuclear localization of stress-responsive factors: how the nuclear trafficking of protein kinases and transcription factors contributes to cell survival. *Oncogene.* 1999; 18(45):6129-6134.(Biology)

Kandel ES, Hay N. The regulation and activities of the multifunctional serine/threonine kinase Akt/PKB. *Exp Cell Res.* 1999; 253(1):210-229.(Biology)