Revision 4

Store at -20C

#4070

Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (Sepharose® Bead Conjugate)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
IP	H M R Hm Mk Dm Z B	Endogenous	60	Rabbit IgG	#P31751, #Q9Y243, #P31749	208, 10000, 207

Product Usage Information

Application	Dilution
Immunoprecipitation	1:20

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol. Store at –20°C. Do not aliquot the antibodies.

Specificity/Sensitivity

Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (Sepharose® Bead Conjugate) immunoprecipitates endogenous levels of Akt only when phosphorylated at Ser473.

Species predicted to react based on 100% sequence homology

Chicken, Xenopus, Dog, Pig

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Ser473 of human Akt.

Description

This Cell Signaling Technology (CST) antibody is immobilized via covalent binding of primary amino groups to N-hydroxysuccinimide (NHS)-activated Sepharose® beads. Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (Sepharose® Bead Conjugate) is useful for immunoprecipitation assays. The unconjugated Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb #4060 reacts with human, mouse, rat, hamster, *Drosophila melanogaster,* bovine and zebrafish phospho-Akt protein. CST expects that Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (Sepharose® Bead Conjugate) will also recognize phospho-Akt in these species.

Background

Akt, also referred to as PKB or Rac, plays a critical role in controlling cell survival and apoptosis (1-3). This protein kinase is activated by insulin and various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (2,3). Akt is activated by phospholipid binding and activation loop phosphorylation at Thr308 by PDK1 (4) and by phosphorylation within the carboxy terminus at Ser473. The previously elusive PDK2 responsible for phosphorylation of Akt at Ser473 has been identified as mammalian target of rapamycin (mTOR) in a rapamycin-insensitive complex with rictor and Sin1 (5,6). Akt promotes cell survival by inhibiting apoptosis through phosphorylation and inactivation of several targets, including Bad (7), forkhead transcription factors (8), c-Raf (9), and caspase-9. PTEN phosphatase is a major negative regulator of the PI3K/Akt signaling pathway (10). LY294002 is a specific PI3 kinase inhibitor (11). Another essential Akt function is the regulation of glycogen synthesis through phosphorylation and inactivation of GSK-3α and β (12,13). Akt may also play a role in insulin stimulation of glucose transport (12). In addition to its role in survival and glycogen synthesis, Akt is involved in cell cycle regulation by preventing GSK-3β-mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin-dependent kinase inhibitors p27 Kip1 (15) and p21 Waf1/Cip1 (16). Akt also plays a critical role in cell growth by directly phosphorylating mTOR in a rapamycin-sensitive complex containing raptor (17). More importantly, Akt phosphorylates and inactivates tuberin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18,19).

Background References

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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

IP: Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Hm:** Hamster **Mk:** Monkey **Dm:** D. melanogaster **Z:** Zebrafish **B:** Bovine

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Limited Uses