



## **Phospho-AKT1-T450 Polyclonal Antibody**

**E9P000**

**For Research Use Only**

- Catalog Number:** E9P0004
- Amount:** 100ul
- Background:** Akt, also referred to as PKB or Rac, plays a critical role in controlling 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 PI3 kinase/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-3 $\alpha$  and  $\beta$  (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-3 $\beta$ -mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin dependent kinase inhibitors p27 Kip (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 tuberlin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18,19).
- Species:** Rabbit
- Isotype:** IgG
- Storage/Stability:** Store at -20oC or -80oC. Avoid freeze / thaw cycles. Buffer: PBS with 0.02% sodium azide, 50% glycerol, pH7.3.
- Synonyms:** AKT ; AKT1; Proto oncogene c Akt; RAC PK alpha; PKB; PKB ALPHA
- Immunogen:** A phospho specific peptide corresponding to residues surrounding T450 of human AKT1
- Purification:** Affinity purification
- Reactivity:** H M R
- Applications:** WB IHC
- Molecular Weight:** 56kDa
- Swiss-Prot No. :** P31749
- Gene ID:** 207
- References:** 1. Franke, T.F. et al. (1997) Cell 88, 435-7. 2. Burgering, B.M. and Coffey, P.J. (1995) Nature 376, 599-602. 3. Franke, T.F. et al. (1995) Cell 81, 727-36. 4. Alessi, D.R. et al. (1996) EMBO J 15, 6541-51. 5. Sarbassov, D.D. et al. (2005) Science 307, 1098-101. 6. Jacinto, E. et al. (2006) Cell 127, 125-37. 7. Cardone, M.H. et al. (1998) Science 282, 1318-21. 8. Brunet, A. et al. (1999) Cell 96, 857-68. 9. Zimmermann, S. and Moelling, K. (1999) Science 286, 1741-4. 10. Cantley, L.C. and Neel, B.G. (1999) Proc Natl Acad Sci USA 96, 4240-5. 11. Vlahos, C.J. et al. (1994) J Biol Chem 269, 5241-8. 12. Hajdich, E. et al. (2001) FEBS Lett 492, 199-203. 13. Cross, D.A. et al. (1995) Nature 378, 785-9. 14. Diehl, J.A. et al. (1998) Genes Dev 12, 3499-511. 15. Gesbert, F. et al. (2000) J Biol Chem 275, 39223-30. 16. Zhou, B.P. et al. (2001) Nat Cell Biol 3, 245-52. 17. Navé, B.T. et al. (1999) Biochem J 344 Pt 2, 427-31. 18. Inoki, K. et al. (2002) Nat Cell Biol 4, 648-57. 19. Manning, B.D. et al. (2002) Mol Cell 10, 151-62.

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WB 1:500 - 1:2000

IHC 1:50- 1:200

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