

Phospho-Akt (Ser473) (736E11) Rabbit mAb

- Small 100 µl (25 sections)
- Large 300 µl (75 sections)

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity	Molecular Wt.	Isotype
IHC-P, IHC-F Endogenous	H, M, (R)	60 kDa	Rabbit IgG*

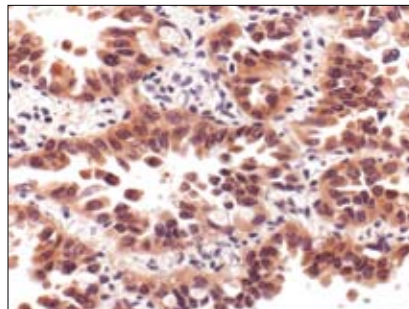
Background: Akt, also referred to as PKB or Rac, plays a critical role in controlling survival and apoptosis (1-3). This protein kinase is activated by insulin and various growth and survival factors and functions in a wortmannin-sensitive pathway involving PI3 kinase (2,3). Akt is activated by phospholipid 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, termed TORC2 (5,6). Akt promotes cell survival by inhibiting apoptosis through its ability to phosphorylate and inactivate 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).

One of the essential functions of Akt 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).

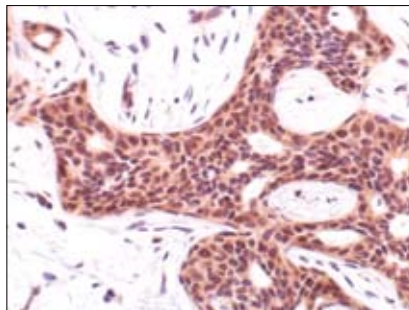
In addition to its role in survival and glycogen synthesis, Akt is involved in cell cycle regulation by preventing GSK-3β mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin dependent kinase inhibitors p27 Kip (15) and p21 Waf1 (16). Akt also plays a critical role in cell growth by directly phosphorylating mTOR in a rapamycin-sensitive complex containing raptor, termed TORC1 (17). More importantly, Akt phosphorylates and inactivates tuberlin (TSC2), an inhibitor of mTOR within the TORC1 complex (18). Inhibition of mTOR stops the protein synthesis machinery due to inactivation of its effector, p70

Specificity/Sensitivity: Phospho-Akt (Ser473) (736E11) Rabbit mAb (IHC Specific) detects Akt1 only when phosphorylated at serine 473, and Akt2 and Akt3 only when phosphorylated at equivalent sites.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser473 of mouse Akt.



Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using Phospho-Akt (Ser473) (736E11) Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma, showing cytoplasmic and nuclear localization, using Phospho-Akt (Ser473) (736E11) Rabbit mAb.

Entrez-Gene ID #207
Swiss-Prot Acc. #P31749

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

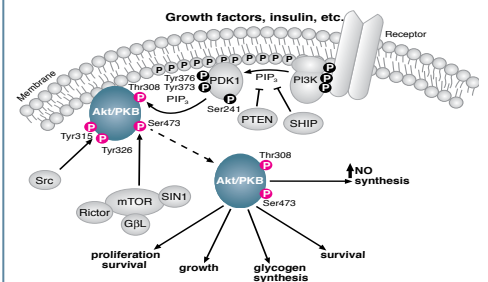
*Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

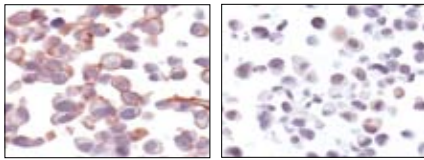
Immunohistochemistry (Paraffin) 1:50
Unmasking buffer: Citrate
Antibody diluent: SignalStain® Antibody Diluent #8112
Immunohistochemistry (Frozen) 1:50
Fixative: 3% Formaldehyde

For application specific protocols please see the web page for this product at www.cellsignal.com.

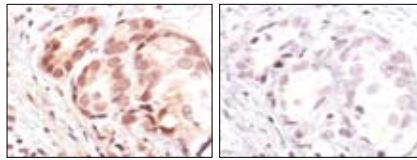
Please visit www.cellsignal.com for a complete listing of recommended companion products.



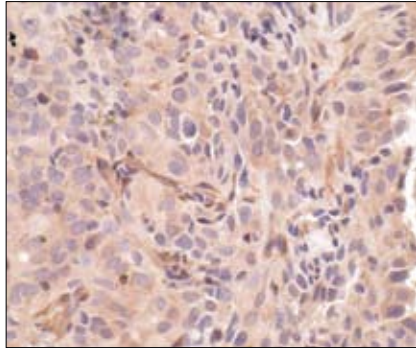
Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA—Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



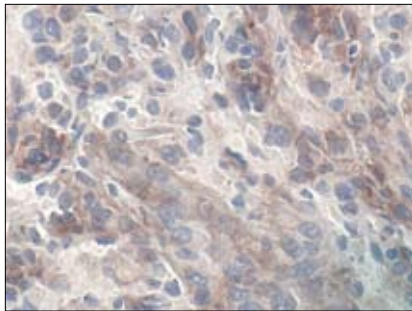
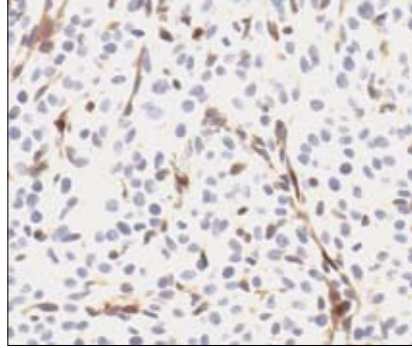
Immunohistochemical analysis using Phospho-Akt (Ser473) (736E11) Rabbit mAb on SignalSlide® Phospho-Akt (Ser473) IHC Controls #8101 (paraffin-embedded LNCaP cells, untreated (left) or LY294002-treated (right)).



Immunohistochemical analysis of paraffin-embedded human prostate carcinoma, using Phospho-Akt (Ser473) (736E11) Rabbit mAb preincubated with an irrelevant peptide (left) or Phospho-Akt (Ser473) Blocking Peptide (IHC Specific) #1140 (right).



Immunohistochemical analysis of paraffin-embedded MDA-MB-468 xenograft, using Phospho-Akt (Ser473) (736E11) Rabbit mAb (left) or PTEN (138G6) Rabbit mAb #9559 (right). MDA-MB-468 cells lack PTEN. Note the presence of P-Akt in the PTEN deficient cells.



Immunohistochemical analysis of frozen U-87MG xenograft, using Phospho-Akt (Ser473)(736E11) Rabbit mAb.

Background References:

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