

# MAB-94111 Rabbit Anti- Phospho-Akt (Ser473) clone (D9E)

100 ul (20 Western blots)

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
WB, IP, IHC, IF-IC IgG**	H, M, R,	60 kDa	Rabbit

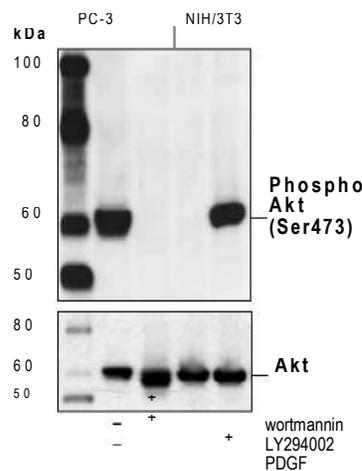
Entrez-Gene ID #207  
Swiss-Prot Acc. #P31749

**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 by phosphorylating and inactivating 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).

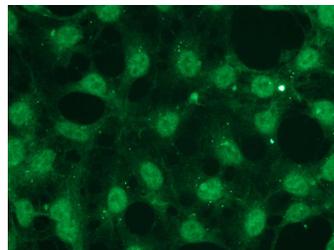
In addition to its role in survival and glycogen synthesis, Akt is involved in cell cycle regulation by preventing GSK-3 $\alpha$  mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin dependent kinase inhibitors p27 Kip (15) and p21 Waf1/CIP1 (16). Akt also plays a critical role in cell growth by directly phosphorylating mTOR in a rapamycin-insensitive complex containing raptor (17). More importantly, Akt phosphorylates and inactivates tuberin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18). Inhibition of mTOR stops the protein synthesis machinery by inactivating p70 S6 kinase and activating the eukaryotic initiation factor 4E binding protein 1 (4E-BP1), an inhibitor of translation (18,19).

Western blot analysis of extracts from PC-3 cells, untreated or LY294002/wortmannin-treated, and NIH/3T3 cells, serumstarved or PDGF-treated, using Phospho-Akt (Ser473) (D9E) Rabbit mAb (upper) or Akt (pan) (C67E7) Rabbit mAb (lower).



**Specificity/Sensitivity:** Phospho-Akt (Ser473) (D9E) Rabbit mAb detects endogenous levels of Akt only when phosphorylated at Ser473.

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



Immunocytochemistry: Representative picture of AKT (only when Phosphorylated at the Ser473 residue) in HEK293 cells, visualized with Monoclonal Rabbit anti AKT, pSer473 antibody. Primary antibody dilution: 1:50

**Orders:** sales@immunologicalsciences.com

**Support:** info@immunologicalsciences.com

[www.immunologicalsciences.com](http://www.immunologicalsciences.com)

**Buffer:** Supplied in 20 mM Tris HCL pH 8.0 buffer and 10 mg/mL BSA as stabilizer and 0.5% Sodium Azide.

**Store :** at +4°C for short term. At -20°C for long term. Avoid freezing and thawing cycles .

**Shipping :** At room Temperature

### Avoid Freezing and Thawing Cycles

#### Recommended Antibody Dilutions:

Western blotting	1:2000
Immunoprecipitation	1:50
Immunocytochemistry	1:50
Immunohistochemistry	ND

#### Important:

For Western Blot solutions:

-Wash buffer 1x Tris Buffered Saline (TBS);  
0.1% Triton X-100 ;

-Blocking buffer: 1 XTBS; 0.1% Triton X-100,  
2% BSA

For western blots, incubate membrane with diluted antibody in blocking buffer at Room Temperature for 2 hours.

Note: Anti Rabbit HRP secondary antibody must be used for Western Blot

(cat. IS-1054P Gt Anti Rb IgG)