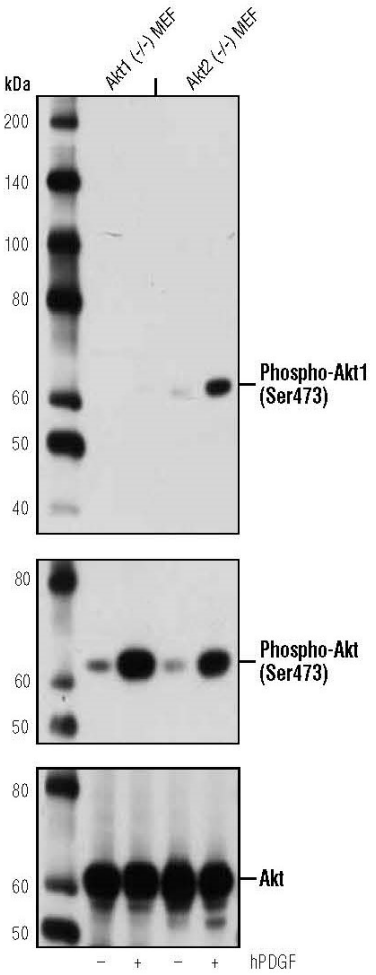
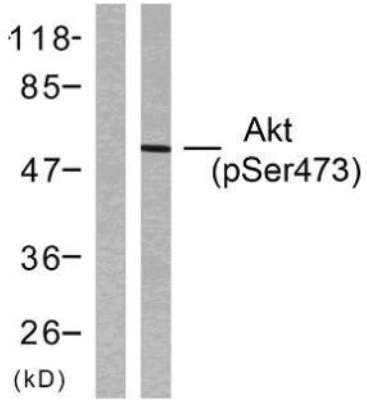
Product name:	Phospho-AKT1 (S473) Rabbit Monoclonal Antibody
Cat number:	MAB-94125
Conjugate:	Unconjugated
Size:	100 ug
Clone:	D7F10
Concentration:	1mg/ml
Host:	Rabbit
Isotype:	IgG
Immunogen:	The antiserum was produced against synthesized peptide derived from human Akt around the phosphorylation site of Ser473. AA range:431-480
Reactivity:	Human;Mouse;Rat;Chicken
Applications:	Western Blot: 1/500 - 1/2000 Immunofluorescence: 1:50-200 Immunohistochemistry: 1/100 - 1/300
Molecular Weight:	60 kDa
Purification:	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Form:	liquid
Buffer:	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Storage:	Store: At +4°C for short term, at-20°C for longer term Avoid freezing and thawing cycles

Background:

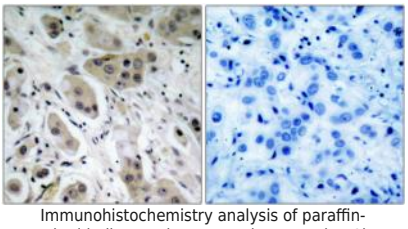
Akt, also referred to as PKB or Rac, plays a critical role in controlling survival and apoptosis (1-3). This protein kinase is activated by insulin and various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (2,3). Akt is activated by phospholipid binding 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 and (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 -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 tuberin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18,19). Specificity/Sensitivity: Phospho-Akt1 (Ser473) (D7F10) Rabbit mAb (Akt1 Specific) recognizes endogenous levels of Akt1 protein only when phosphorylated at Ser473. It does not detect Akt2 protein when phosphorylated at Ser474.



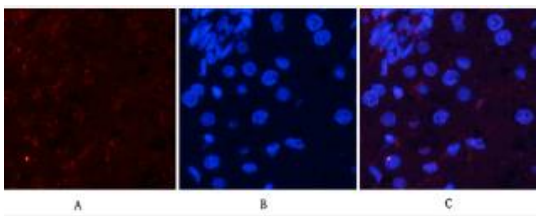
Western blot analysis of extracts from Akt1 (-/-) mouse embryonic fibroblast (MEF) or Akt2 (-/-) MEF, untreated or stimulated with hPDGF (100 ng/ml, 15 min), using Phospho-Akt1 (Ser473) (D7F10) XP® Rabbit mAb (Akt1 Specific) (upper), Phospho-Akt (Ser473) (D9E) Rabbit mAb (middle), or Akt (pan) (C67E7) Rabbit (lower).



Western blot analysis of lysates from HeLa cells treated with heat shock, using Akt (Phospho-Ser473) Antibody. The lane on the left is blocked with the phospho peptide.



Immunohistochemistry analysis of paraffin-embeddedhuman breast carcinoma, using Akt (Phospho-Ser473) Antibody. The picture on the right is blocked with the phospho peptide.



Immunofluorescence analysis of rat-liver tissue. 1,Akt (phospho Ser473) Polyclonal Antibody(red) was diluted at 1:200(4°C,overnight). 2, Cy3 labled Secondary antibody was diluted at 1:300(room temperature, 50min). 3, Picture B: DAPI(blue) 10min. Picture A:Target. PictureB: DAPI. Picture C: merge of A+B