

## **Akt1 Polyclonal Antibody**

Catalog No: YT0177

**Reactivity:** Human; Mouse; Rat

**Applications:** WB;IHC;IF;ELISA

Target: Akt1

**Fields:** >>EGFR tyrosine kinase inhibitor resistance;>>Endocrine

resistance;>>Platinum drug resistance;>>MAPK signaling pathway;>>ErbB signaling pathway;>>Ras signaling pathway;>>CAMP-PKG signaling pathway;>>cAMP signaling pathway;>>Chemokine signaling pathway;>>HIF-1 signaling pathway;>>FoxO signaling pathway;>>Sphingolipid signaling pathway;>>Phospholipase D signaling pathway;>>Autophagy - animal;>>mTOR signaling pathway;>>Pl3K-Akt signaling pathway;>>AMPK signaling pathway;>>Apoptosis;>>Longevity regulating pathway;>>Longevity regulating pathway - multiple species;>>Cellular senescence;>>Adrenergic signaling in cardiomyocytes;>>VEGF signaling pathway;>>Apelin signaling pathway:>>Osteoclast differentiation:>>Focal adhesion:>>Signaling pathways

regulating pluripotency of stem cells;>>Platelet activation;>>Neutrophil extracellular trap formation;>>Toll-like receptor signaling pathway;>>C-type lectin

receptor signaling pathway;>>JAK-STAT signaling pathway;>>T cell recept

Gene Name: AKT1

**Protein Name:** RAC-alpha serine/threonine-protein kinase

Human Gene ld: 207

**Human Swiss Prot** 

No:

P31749

Mouse Gene ld: 11651

**Mouse Swiss Prot** 

P31750

No:

Rat Gene ld: 24185

Rat Swiss Prot No: P47196

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**Immunogen:** The antiserum was produced against synthesized peptide derived from human

Akt. AA range:95-144

**Specificity:** Akt1 Polyclonal Antibody detects endogenous levels of Akt1 protein.

**Formulation :** Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Source: Polyclonal, Rabbit, IgG

**Dilution:** WB 1:500 - 1:2000. IHC 1:100 - 1:300. IF 1:200 - 1:1000. ELISA: 1:40000. Not

yet tested in other applications.

**Purification:** The antibody was affinity-purified from rabbit antiserum by affinity-

chromatography using epitope-specific immunogen.

Concentration: 1 mg/ml

Storage Stability: -15°C to -25°C/1 year(Do not lower than -25°C)

Observed Band: 56kD

**Cell Pathway:** Regulation\_Microtubule; T\_Cell\_Receptor; Regulates Angiogenesis;

SAPK\_JNK; Stem cell pathway; Insulin Receptor; Toll\_Like; ErbB/HER; AMPK; MAPK\_ERK\_Growth; MAPK\_G\_Protein; B\_Cell\_Antigen; Adherens\_Junc

**Background:** The serine-threonine protein kinase encoded by the AKT1 gene is catalytically

inactive in serum-starved primary and immortalized fibroblasts. AKT1 and the related AKT2 are activated by platelet-derived growth factor. The activation is rapid and specific, and it is abrogated by mutations in the pleckstrin homology

domain of AKT1. It was shown that the activation occurs through

phosphatidylinositol 3-kinase. In the developing nervous system AKT is a critical

mediator of growth factor-induced neuronal survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating the serine/threonine kinase AKT1, which then phosphorylates and inactivates components of the apoptotic machinery. Mutations in this gene have been associated with the Proteus syndrome. Multiple alternatively spliced transcript

variants have been found for this gene. [provided by RefSeq, Jul 2011]

**Function:** catalytic activity:ATP + a protein = ADP + a phosphoprotein.,disease:Defects in

AKT1 are associated with breast cancer (BC) [MIM:114480]. BC is an extremely

common malignancy, affecting one in eight women during their

lifetime.,disease:Defects in AKT1 are associated with colorectal cancer (CRC) [MIM:114500].,disease:Defects in AKT1 are associated with susceptibility to ovarian cancer [MIM:604370]; also called susceptibility to familial breast-ovarian

cancer type 1 (BROVCA1).,domain:Binding of the PH domain to the

phosphatidylinositol 3-kinase alpha (PI(3)K) results in its targeting to the plasma

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membrane.,domain:The AGC-kinase C-terminal mediates interaction with THEM4.,enzyme regulation:Three specific sites, one in the kinase domain (Thr-308) and the two other ones in the C-terminal regulatory region (Ser-473 and Tyr-474), need to be phosphorylated for its full activation.,function:Gene

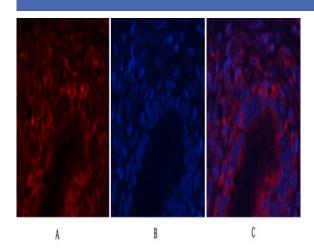
## Subcellular Location:

Cytoplasm . Nucleus . Cell membrane . Nucleus after activation by integrin-linked protein kinase 1 (ILK1). Nuclear translocation is enhanced by interaction with TCL1A. Phosphorylation on Tyr-176 by TNK2 results in its localization to the cell membrane where it is targeted for further phosphorylations on Thr-308 and Ser-473 leading to its activation and the activated form translocates to the nucleus. Colocalizes with WDFY2 in intracellular vesicles (PubMed:16792529).

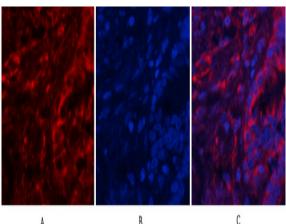
## **Expression:**

Expressed in prostate cancer and levels increase from the normal to the malignant state (at protein level). Expressed in all human cell types so far analyzed. The Tyr-176 phosphorylated form shows a significant increase in expression in breast cancers during the progressive stages i.e. normal to hyperplasia (ADH), ductal carcinoma in situ (DCIS), invasive ductal carcinoma (IDC) and lymph node metastatic (LNMM) stages.

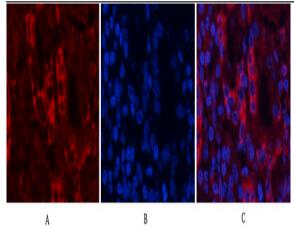
## **Products Images**



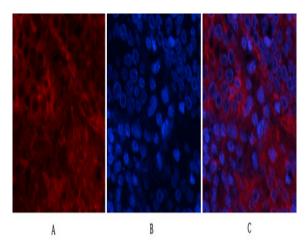
Immunofluorescence analysis of human-lung tissue. 1,Akt1 Polyclonal Antibody(red) was diluted at 1:200(4°C,overnight). 2, Cy3 labled Secondary antibody was diluted at 1:300(room temperature, 50min).3, Picture B: DAPI(blue) 10min. Picture A:Target. Picture B: DAPI. Picture C: merge of A+B



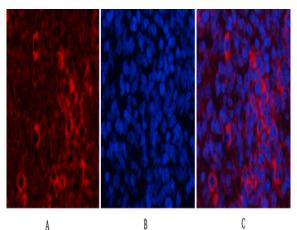
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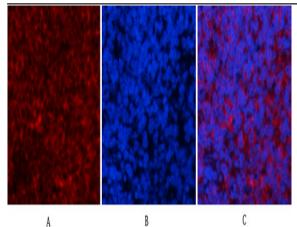
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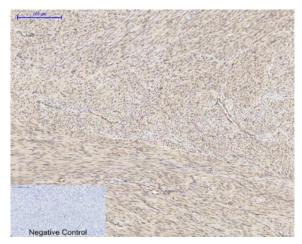
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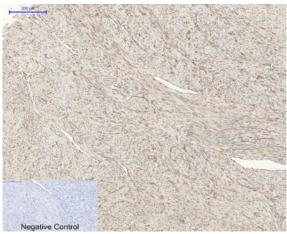
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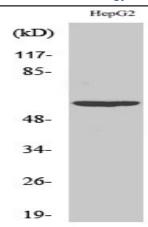
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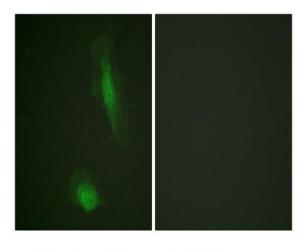
Immunohistochemical analysis of paraffin-embedded Humanuterus tissue. 1,Akt1 Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



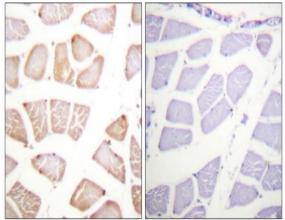
Immunohistochemical analysis of paraffin-embedded Humanuterus-cancer tissue. 1,Akt1 Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



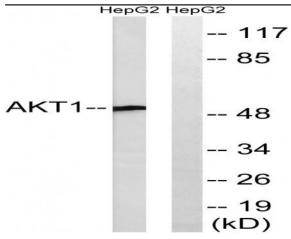
Western Blot analysis of various cells using Akt1 Polyclonal Antibody diluted at 1:2000



Immunofluorescence analysis of HeLa cells, using Akt Antibody. The picture on the right is blocked with the synthesized peptide.



Immunohistochemistry analysis of paraffin-embedded human skeletal muscle tissue, using Akt Antibody. The picture on the right is blocked with the synthesized peptide.



Western blot analysis of lysates from HepG2 cells, treated with Serum 30% 30', using Akt Antibody. The lane on the right is blocked with the synthesized peptide.