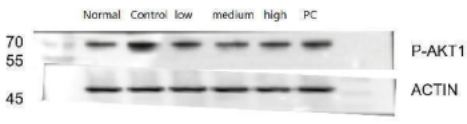
Phospho-AKT1 (pT450) Antibody / Activation and PI3K-AKT Signaling Marker Antibody [clone HEA-1] (RQ8829)

Catalog No.	Formulation	Size
RQ8829	Antibody in PBS with 0.02% sodium azide, 50% glycerol and 0.4-0.5mg/ml BSA	100 ul

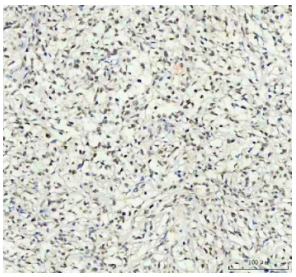
Recombinant RABBIT MONOCLONAL

Bulk quote request

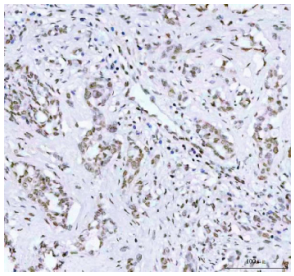
Availability	1-3 days
Species Reactivity	Human, Mouse, Rat
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	HEA-1
Localization	Nucleus, plasma membrane, cytoplasm
Applications	Western blot: 1:500-1:2000 Immunohistochemistry (FFPE): 1:50-1:200 Immunofluorescence: 1:50-1:200
Limitations	This Phospho-AKT1 (pT450) Antibody / Activation and PI3K-AKT Signaling Marker Antibody is available for research use only.



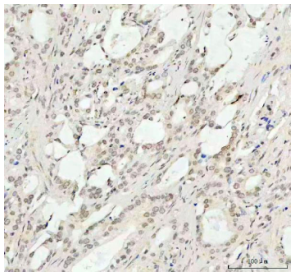
Phospho-AKT1 (pT450) Antibody Rat Colon WB. Western blot analysis of rat colon tissue lysates under normal, control, low-dose, medium-dose, and positive treatment conditions shows a band at approximately 70 kDa using phospho-AKT1 (pT450) antibody, compared to the predicted molecular weight of ~56 kDa for AKT1, consistent with phosphorylation-dependent mobility shift and activation state of the kinase; signal intensity varies across treatment groups, reflecting modulation of AKT1 phosphorylation, while ACTIN serves as a loading control; clone HEA-1 was used for detection.



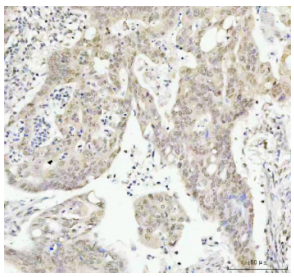
Phospho-AKT1 (pT450) Antibody Lymphoma Tissue IHC. Immunohistochemistry of FFPE human intestinal diffuse large B-cell lymphoma tissue using phospho-AKT1 (pT450) antibody shows HRP-DAB brown cytoplasmic and nuclear staining in malignant lymphoid cells, consistent with activated PI3K-AKT signaling and phosphorylation at the T450 turn motif, while surrounding stromal elements display lower background; clone HEA-1 was used for detection. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



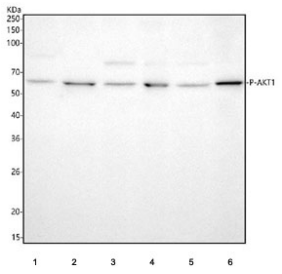
Phospho-AKT1 (pT450) Antibody Lung Adenocarcinoma IHC. Immunohistochemistry of FFPE human lung adenocarcinoma tissue using phospho-AKT1 (pT450) antibody demonstrates HRP-DAB brown cytoplasmic and nuclear staining in tumor epithelial cells, consistent with phosphorylation-dependent AKT1 activation within PI3K-AKT signaling, while stromal regions show comparatively reduced staining; detection was performed with clone HEA-1. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



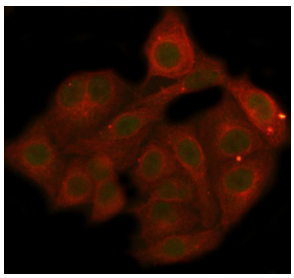
Phospho-AKT1 (pT450) Antibody Prostate Cancer Tissue IHC. Immunohistochemistry of FFPE human prostate carcinoma tissue using phospho-AKT1 (pT450) antibody shows HRP-DAB brown cytoplasmic and nuclear staining in tumor epithelial cells, consistent with phosphorylation at the T450 turn motif and active PI3K-AKT signaling, while surrounding stromal components display lower background; detection was performed with clone HEA-1. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Phospho-AKT1 (pT450) Antibody Colorectal Adenocarcinoma IHC. Immunohistochemistry of FFPE human colorectal adenocarcinoma tissue using phospho-AKT1 (pT450) antibody shows HRP-DAB brown cytoplasmic and nuclear staining in tumor epithelial cells, consistent with phosphorylation at the T450 turn motif and active PI3K-AKT signaling, while adjacent stromal regions display lower background; detection was performed with clone HEA-1. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Phospho-AKT1 (pT450) Antibody WB. Western blot testing of 1) human HeLa, 2) human MCF7, 3) rat brain, 4) rat PC-12, 5) mouse brain and 6) mouse NIH 3T3 cell lysate with Phospho-AKT1 Antibody.



Phospho-AKT1 (pT450) Antibody A549 IF. Immunofluorescence analysis of FFPE human A549 cells using phospho-AKT1 (pT450) antibody (green) shows cytoplasmic and nuclear signal consistent with phosphorylation at the T450 turn motif, while Beta Actin (red) highlights the cytoskeletal network; nuclei are counterstained with DAPI (blue). Detection was performed with clone HEA-1. HIER: steam sections in pH6 citrate buffer for 20 min.

Description

Protein kinase B alpha (AKT1) is a serine-threonine kinase that functions as a central regulator of the PI3K-AKT signaling pathway, controlling cellular processes including metabolism, proliferation, survival, and growth. AKT1 activation is a multi-step process that involves membrane recruitment via its pleckstrin homology domain followed by phosphorylation at key regulatory residues. Among these sites, threonine 450 (T450) is located within the turn motif and plays an important role in stabilizing the kinase and supporting proper folding and maturation. This phosphorylation event contributes to the structural integrity and sustained signaling capacity of AKT1.

Phospho-AKT1 (pT450) antibody, also referred to as AKT1 pT450 antibody and phosphorylated AKT1 antibody in the literature, recognizes AKT1 specifically when phosphorylated at threonine 450. Detection of this modification provides insight into AKT1 activation status and kinase regulation, particularly in response to upstream PI3K signaling. Unlike phosphorylation at other regulatory residues that directly control catalytic activity, T450 phosphorylation is associated with protein stability and proper conformational maintenance, making it an important indicator of functional AKT1 protein within cells.

This Phospho-AKT1 (pT450) Antibody / Activation and PI3K-AKT Signaling Marker Antibody (clone HEA-1) is uniquely positioned for studies of signaling dynamics and pathway regulation. AKT1 phosphorylation is frequently altered in cancer and other disease states, where dysregulation of PI3K-AKT signaling leads to enhanced cell survival, resistance to apoptosis, and increased proliferation. Monitoring phosphorylation at T450 provides valuable information about the presence of properly folded and signaling-competent AKT1, complementing analysis of other phosphorylation sites involved in acute activation.

In western blot analysis, phosphorylated AKT1 may exhibit an apparent molecular weight higher than the predicted size due to phosphorylation-dependent changes in electrophoretic mobility. This shift is commonly observed in activated or treatment-responsive samples, where increased phosphorylation correlates with altered migration patterns. Treatment-dependent variation in phospho-AKT1 signal intensity can reflect modulation of upstream signaling pathways and cellular response to pharmacological agents.

Clone HEA-1 is a recombinant rabbit monoclonal antibody designed to detect AKT1 phosphorylated at threonine 450 with specificity for the modified form of the protein. A phospho-AKT1 antibody is suitable for detecting phosphorylation-dependent changes in AKT1 signaling in studies of PI3K-AKT pathway activation, cancer biology, and cellular signaling regulation.

For a microarray-validated AKT1 antibody supporting high-specificity detection, see our AKT1 antibody (clone AKT1/2552).

Application Notes

Optimal dilution of the Phospho-AKT1 (pT450) Antibody / Activation and PI3K-AKT Signaling Marker Antibody should be determined by the researcher.

Immunogen

A synthetic peptide specific to the region of human AKT1 protein surrounding phosphorylated threonine 450 was used as the immunogen for the Phospho-AKT1 (pT450) Antibody.

Storage

Store the Phospho-AKT1 (pT450) Antibody at -20oC.

Alternate Names

Phospho AKT1 T450 antibody, AKT1 pT450 antibody, Phosphorylated AKT1 antibody, Protein kinase B alpha phospho T450 antibody, AKT1 activation marker antibody

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