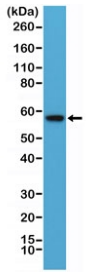
AKT Antibody / PH Domain Membrane Recruitment Marker Antibody [clone RM316] (R20335)

Catalog No.	Formulation	Size
R20335-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

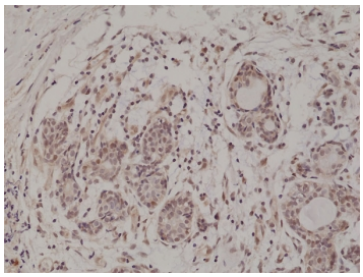
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM316
Purity	Protein A purified from animal origin-free supernatant
UniProt	P31749, P31751, Q9Y243
Localization	Cytoplasmic, membranous, nuclear
Applications	Immunohistochemistry (FFPE) : 1:200-1:500 Western Blot : 1:5000-1:10000
Limitations	This AKT Antibody / PH Domain Membrane Recruitment Marker Antibody is available for research use only.



AKT Antibody HEK293 WB. Western blot analysis of human HEK293 cell lysate using AKT antibody detects a band at approximately 55-60 kDa, consistent with the predicted molecular weight of AKT, supporting detection of the kinase via its PH domain; the antibody was used at 1:10,000 dilution.



AKT Antibody Breast Cancer Tissue IHC. Immunohistochemistry of FFPE human breast carcinoma tissue using AKT antibody shows HRP-DAB brown cytoplasmic and nuclear staining in tumor epithelial cells, consistent with PI3K-dependent AKT signaling and membrane recruitment dynamics mediated by the PH domain, while surrounding stromal cells display lower background; detection was performed at 1:500 dilution using clone RM316. HIER: steam tissue sections in pH6 citrate buffer for 20 min and allow to cool prior to staining.

Description

AKT, also known as Protein kinase B (AKT), is a central serine-threonine kinase that regulates cell survival, metabolism, proliferation, and growth through the PI3K-AKT signaling pathway. AKT activation is initiated by phosphoinositide 3-kinase activity, which generates phosphatidylinositol 3,4,5-trisphosphate (PIP3) at the plasma membrane. This lipid second messenger recruits AKT through its pleckstrin homology (PH) domain, enabling membrane localization and subsequent phosphorylation-dependent activation. AKT proteins are broadly expressed across tissues and function as key mediators of intracellular signaling in both normal physiology and disease states.

AKT antibody, also referred to as Protein kinase B antibody and PKB antibody in the literature, recognizes a conserved region within the PH domain that is shared across AKT isoforms, supporting detection of AKT proteins involved in membrane recruitment and early activation events. The PH domain is essential for binding phosphoinositides such as PIP3, which facilitates AKT translocation from the cytoplasm to the plasma membrane. This translocation is a defining step in AKT signaling, linking extracellular growth factor stimulation to intracellular kinase activation. As a result, antibodies targeting the PH domain are useful for studying AKT localization dynamics and membrane-associated signaling processes.

This AKT Antibody / PH Domain Membrane Recruitment Marker Antibody (clone RM316) is uniquely positioned for research focused on AKT activation mechanisms and lipid-mediated signaling. By targeting the PH domain, this antibody supports investigation of AKT recruitment to cellular membranes, a critical regulatory step preceding phosphorylation at key activation residues. This functional positioning distinguishes PH domain-directed antibodies from phospho-specific reagents, which detect activated AKT after phosphorylation has occurred. Instead, PH domain targeting provides insight into upstream signaling events and spatial regulation of kinase activity.

In cellular and tissue-based studies, AKT localization can be observed in cytoplasmic and membrane-associated compartments depending on signaling context. Membrane enrichment of AKT is typically associated with active PI3K signaling, while cytoplasmic distribution reflects inactive or basal states. These localization patterns are particularly relevant in cancer biology, where dysregulation of PI3K signaling leads to aberrant AKT activation, enhanced cell survival, and resistance to apoptosis. Alterations in AKT membrane recruitment and signaling dynamics are therefore key features of oncogenic transformation and tumor progression.

Clone RM316 is a recombinant rabbit monoclonal antibody designed to recognize AKT proteins via the PH domain, providing consistent and specific detection in research applications. An AKT antibody is suitable for detecting AKT expression and studying membrane recruitment, lipid binding interactions, and PI3K-dependent signaling processes across a range of experimental systems.

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

Application Notes

The stated application concentrations are suggested starting points. Titration of the AKT Antibody / PH Domain Membrane Recruitment Marker Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A peptide corresponding to the PH domain of human AKT1/2/3 was used as the immunogen for the recombinant AKT antibody.

Storage

Store the AKT antibody at -20oC.

Alternate Names

AKT antibody, Protein kinase B antibody, PKB antibody, AKT PH domain antibody, AKT membrane localization antibody