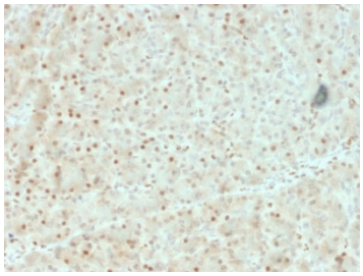
AKT1 Antibody / PI3K-AKT Signaling and Cancer Marker Antibody [clone AKT1/2552] (V3799)

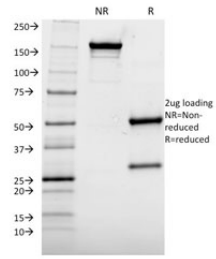
Catalog No.	Formulation	Size
V3799-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3799-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3799SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

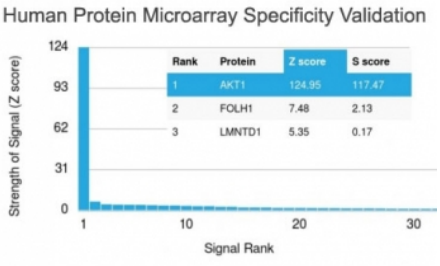
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b, kappa
Clone Name	AKT1/2552
Purity	Protein G affinity chromatography
UniProt	P31749
Localization	Nucleus, plasma membrane, cytoplasm
Applications	Western blot: 2-4ug/ml Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This AKT1 Antibody / PI3K-AKT Signaling and Cancer Marker Antibody is available for research use only.



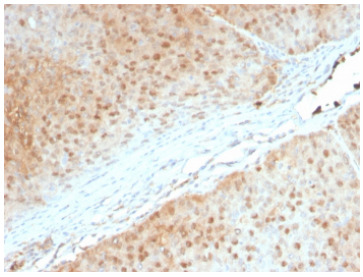
AKT1 Antibody Pancreas Signaling IHC. Immunohistochemistry of FFPE human pancreas tissue using AKT1 antibody highlights HRP-DAB brown cytoplasmic and nuclear staining in pancreatic epithelial cells, consistent with active PI3K-AKT signaling, while stromal regions show lower background; detection was performed with clone AKT1/2552. HIER: boil tissue sections in pH6 10mM citrate buffer for 10-20 min followed by cooling at RT for 20 min.



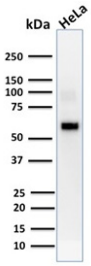
SDS-PAGE analysis of purified, BSA-free AKT1 antibody (clone AKT1/2552) as confirmation of integrity and purity.



AKT1 Antibody Microarray Specificity Validation. Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using AKT1 antibody (clone AKT1/2552) demonstrates highly specific binding to AKT1 with strong signal intensity and clear separation from non-target proteins, supporting proteome-wide specificity. Z- and S-score metrics reflect signal strength and relative specificity compared to other proteins on the array.



AKT1 Antibody Pancreas Tissue IHC. Immunohistochemistry of FFPE human pancreas tissue using AKT1 antibody shows widespread HRP-DAB brown cytoplasmic and nuclear staining in pancreatic epithelial cells, consistent with active PI3K-AKT signaling, while stromal regions display comparatively lighter staining; detection was performed with clone AKT1/2552.



AKT1 Antibody HeLa WB. Western blot analysis of human HeLa cell lysate using AKT1 antibody detects a band at approximately 55-60 kDa, consistent with the predicted molecular weight of AKT1, a central kinase in PI3K-AKT signaling; detection was performed with clone AKT1/2552.

Description

AKT1, also known as Protein kinase B alpha (AKT1), is a serine-threonine kinase that serves as a central regulator of the PI3K-AKT signaling pathway, controlling key cellular processes including metabolism, proliferation, survival, and growth. Activation of AKT1 occurs downstream of phosphoinositide 3-kinase signaling and involves phosphorylation-dependent conformational changes that enable kinase activity and downstream substrate targeting. AKT1 is broadly expressed across tissues and plays a fundamental role in maintaining cellular homeostasis under both normal and stress conditions.

AKT1 antibody, also referred to as Protein kinase B alpha antibody and PKB alpha antibody in the literature, recognizes a cytoplasmic and nuclear kinase that is widely used as a marker of PI3K-AKT pathway activity. AKT1 localization can vary depending on activation state, with cytoplasmic, membranous, and nuclear distribution reflecting dynamic signaling events. This flexibility in subcellular localization makes AKT1 a valuable target for studying signal transduction, particularly in tissues where growth factor signaling and metabolic regulation are tightly controlled.

This AKT1 Antibody / PI3K-AKT Signaling and Cancer Marker Antibody (clone AKT1/2552) is uniquely positioned for research focused on signal transduction and oncology. AKT1 is frequently dysregulated in cancer through upstream pathway activation, mutation, or amplification, leading to enhanced cell survival, resistance to apoptosis, and increased proliferative capacity. Elevated AKT1 activity has been implicated in a wide range of tumor types, including breast,

prostate, lung, and pancreatic cancers, where it contributes to tumor progression and therapeutic resistance. As a result, AKT1 is a key biomarker for studying oncogenic signaling and evaluating pathway-targeted interventions.

In immunohistochemistry, AKT1 expression is commonly observed in both cytoplasmic and nuclear compartments of epithelial and tumor cells, reflecting its role in coordinating intracellular signaling networks. Western blot analysis typically reveals a band corresponding to the expected size of AKT1, with consistent detection across multiple tissue types due to its broad expression profile. These expression patterns support investigations into tissue-specific signaling dynamics as well as comparative analyses across normal and diseased states.

Microarray validation of clone AKT1/2552 supports its specificity for the AKT1 protein, providing confidence in target recognition across diverse experimental systems. As a mouse monoclonal antibody, clone AKT1/2552 offers reproducible performance for detecting AKT1 expression in research applications. An AKT1 antibody is suitable for detecting AKT1 expression in studies of PI3K-AKT signaling, cancer biology, and cellular regulation where kinase-driven pathways are of central interest.

HER2 signaling activates pathways such as PI3K-AKT and MAPK to regulate cell proliferation and survival; see our HER2 antibody page for upstream receptor detection. This antibody is part of a broader antibody panel offered by NSJ Bioreagents.

Application Notes

Titering of the AKT1 Antibody / PI3K-AKT Signaling and Cancer Marker Antibody may be required for optimal performance.

Immunogen

A portion of amino acids 85-189 from the human protein was used as the immunogen for the AKT1 antibody.

Storage

Store the AKT1 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

AKT1 antibody, Protein kinase B alpha antibody, PKB alpha antibody, RAC-alpha serine threonine kinase antibody, AKT1 cancer signaling antibody

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