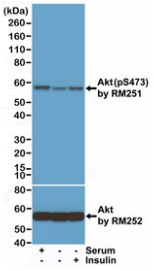
Recombinant phospho-AKT Antibody (pSer473) [clone RM251] (R20271)

Catalog No.	Formulation	Size
R20271-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

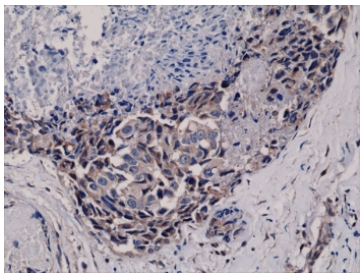
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Mouse, Rat, Bovine
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM251
Purity	Protein A purified from animal origin-free supernatant
UniProt	P31749, P31751, Q9Y243
Gene ID	207, 208, 10000
Applications	Immunohistochemistry (FFPE) : 1:200-1:500 (1) Western Blot : 1:1000-1:2000
Limitations	This recombinant phospho-AKT antibody is available for research use only.



Western blot test of lysates from 293 cells grown in medium with serum, serum starved, or insulin treated, using recombinant phospho-AKT antibody at 1:1000.



IHC testing of FFPE human breast cancer tissue with recombinant phospho-AKT antibody at 1:400.

Description

The Recombinant phospho-AKT antibody is a recombinant reagent engineered to detect AKT only when it is phosphorylated at serine 473 (pSer473). AKT, also known as protein kinase B, is a serine/threonine kinase that integrates signals from growth factors, cytokines, and other extracellular stimuli to regulate cell survival, metabolism, proliferation, and angiogenesis. Full activation of AKT requires phosphorylation at two key residues: threonine 308 in the activation loop and serine 473 in the hydrophobic motif. Phosphorylation at Ser473 is catalyzed primarily by mTOR complex 2 (mTORC2) and is essential for maximal kinase activity. The Recombinant phospho-AKT antibody provides strict specificity for this phosphorylation site, allowing researchers to evaluate AKT pathway activation with high precision.

AKT is encoded by three isoformsÃ¢Â€Â”AKT1, AKT2, and AKT3Ã¢Â€Â”that share similar structures but exhibit distinct physiological functions. AKT1 is broadly expressed and regulates growth and survival, AKT2 is important in glucose metabolism, and AKT3 contributes to brain development. All isoforms require phosphorylation at Ser473 for full activity. Aberrant phosphorylation of AKT is a hallmark of many cancers and contributes to therapeutic resistance, highlighting the importance of reagents that can detect this modification. The Recombinant phospho-AKT antibody is validated for detecting Ser473 phosphorylation across all isoforms, ensuring broad applicability.

In western blotting, the Recombinant phospho-AKT antibody identifies pSer473-AKT as a distinct band, enabling quantitative assessment of pathway activation in response to growth factors, inhibitors, or stress conditions. In immunofluorescence, it highlights cytoplasmic and nuclear pools of activated AKT, providing spatial insight into signaling dynamics. In immunohistochemistry, the antibody detects phosphorylated AKT in tissue samples, where it is often associated with aggressive tumor phenotypes. Recombinant production ensures consistent specificity and reproducibility across lots, a critical feature for phospho-specific antibodies.

The Recombinant phospho-AKT antibody is widely used in cancer biology, where hyperactivation of the PI3K/AKT/mTOR pathway promotes survival and proliferation. It is also applied in metabolic research, as AKT phosphorylation regulates glucose uptake and glycogen synthesis. In cardiovascular and neuroscience research, detection of phosphorylated AKT provides insights into cell survival pathways during ischemia, injury, and degenerative disease. Synonym terms such as recombinant pSer473-AKT antibody, recombinant phospho-Ser473 protein kinase B antibody, and recombinant AKT p473 antibody improve product visibility for researchers searching with alternate nomenclature.

By providing validated and reproducible detection, the Recombinant phospho-AKT antibody supports accurate analysis of one of the most critical signaling pathways in biology. NSJ Bioreagents validates this reagent under stringent quality standards, ensuring reliability in western blotting, immunofluorescence, and immunohistochemistry. With its specificity for Ser473 phosphorylation, the Recombinant phospho-AKT antibody is indispensable for advancing studies of growth signaling, cancer, and therapeutic development.

This recombinant phospho-AKT antibody reacts to AKT1/2/3 only when phosphorylated at Ser473. There is no cross-reactivity with Akt without phosphorylation at Ser473. It may also react to bovine, mouse or rat phospho-AKT (Ser473), as predicted by immunogen homology

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant phospho-AKT antibody

may be required due to differences in protocols and secondary/substrate sensitivity.

1. A pH6 Citrate buffer or pH9 Tris/EDTA buffer HIER step is recommended for testing of FFPE tissue sections.

Immunogen

A phospho-peptide corresponding to human phospho-Akt (Ser473) was used as the immunogen for this recombinant phospho-AKT antibody.

Storage

Store the recombinant phospho-AKT antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).