PRODUCT INFORMATION

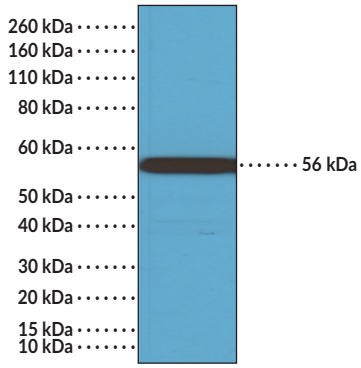
Akt1 (C-Term) Rabbit Monoclonal Antibody (Clone RM252)

Item No. 32205

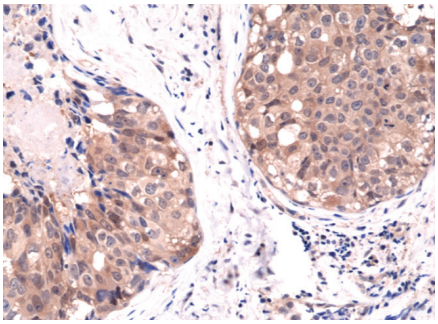
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Protein Kinase Bα, PKBα, RAC-α Serine/threonine-protein Kinase
Immunogen:	Synthetic peptide corresponding to the C-terminal region of human Akt1
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM252
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution for IHC is 1:500-1:1,000 and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of HEK293 cell lysates using Akt1 (C-Term) Rabbit Monoclonal Antibody (Clone RM252) at a dilution of 1:1,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using Akt1 (C-Term) Rabbit Monoclonal Antibody (Clone RM252) at a dilution of 1:1,000.

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Description

Akt1, also known as protein kinase Bα (PKBα), is a serine/threonine kinase belonging to the AGC kinase family and one of three Akt isoforms in mammals.[1,2] Akt kinases function downstream of activated tyrosine kinases and PI3K to regulate a variety of cellular processes, including cell size, growth, proliferation, and survival, as well as genome stability, glucose metabolism, and neovascularization.[2] Akt1, like Akt2 and Akt3, is composed of an N-terminal pleckstrin homology (PH) domain, which binds to phosphatidylinositol-(3,4,5)-triphosphate (PIP_3) and phosphatidylinositol-(3,4)-diphosphate (PIP_2), a kinase domain, and a C-terminal regulatory hydrophobic motif. It is ubiquitously expressed and is the primary isoform in endothelial cells.[3] Akt1 is activated *via* recruitment to the plasma membrane, which is mediated by the interaction of the Akt1 PH domain with PI3K-generated PIP_3 and PIP_2, and subsequent phosphorylation at threonine 308 and serine 473.[2] Increased Akt1 kinase activity has been found in tumor tissue isolated from patients with prostate, breast, and ovarian cancers.[4] Cayman's Akt1 (C-Term) Rabbit Monoclonal Antibody (Clone RM252) can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes Akt1 at approximately 56 kDa from human samples.

References

1. Dummler, B. and Hemmings, B.A. Physiological roles of PKB/Akt isoforms in development and disease. *Biochem. Soc. Trans.* **35(Pt 2)**, 231-235 (2007).
2. Bellacosa, A., Kumar, C.C., Di Cristofano, A., *et al.* Activation of AKT kinases in cancer: Implications for therapeutic targeting. *Adv. Cancer Res.* **94**, 29-86 (2005).
3. Manning, B.D. and Cantley, L.C. AKT/PKB signaling: Navigating downstream. *Cell* **129(7)**, 1261-1274 (2007).
4. Sun, M., Wang, G., Paciga, J.E., *et al.* AKT1/PKBα kinase is frequently elevated in human cancers and its constitutive activation is required for oncogenic transformation in NIH3T3 cells. *Am. J. Pathol.* **159(2)**, 431-437 (2001).

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