Revision 4

Store at -20C

#4458

ARK5 Antibody

Cell Signaling
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	78	Rabbit	#O60285	9891

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

ARK5 Antibody detects endogenous levels of total ARK5 protein.

Species predicted to react based on 100% sequence homology:

Bovine

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Lys403 of human ARK5 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

AMP-activated protein kinases (AMPKs) constitute a serine/threonine protein kinase family, which is highly conserved from yeast to plants and animals and plays a key role in the regulation of energy homeostasis (1). AMPKα1, AMPKα2, MELK, and SNARK are the catalytic subunits in the family (2). Recently, AMPK-related protein kinase ARK5 was identified, which shares 84% similarity with the sequence of the catalytic domain of SNARK (2). *In vitro*, Akt phosphorylates ARK5 at Ser600. This phosphorylation activates ARK5, resulting in increased phosphorylation of the SAMS peptide, an AMPK consensus substrate (2). *In vivo* experiments showed that Akt-activated ARK5 is critical for the survival of cells under glucose starvation (2). Furthermore, studies also linked ARK5 to tumor invasion (3,4). Overexpressed ARK5 leads to a higher tumor growth rate (3). For example, the overexpression of ARK5 in pancreatic tumor cell line PANC-1 significantly elevates its metastasis in the liver (4).

Background References

1. Hardie, D.G. (2004) *J. Cell Sci.* 117, 5479-87.
2. Suzuki, A. et al. (2003) *J. Biol. Chem.* 278, 48-53.
3. Suzuki, A. et al. (2004) *Mol. Cell Biol.* 24, 3526-35.
4. Kusakai, G. et al. (2004) *J. Exp. Clin. Cancer Res.* 23, 263-8.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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