Revision 1

#3319 Store at -20C

MARK1 Antibody

Cell Signaling TECHNOLOGY®

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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	Endogenous	85	Rabbit	#Q9P0L2	4139

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

MARK1 Antibody detects endogenous levels of total MARK1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala547 of MARK1. Antibodies were purified by protein A and peptide affinity chromatography.

Background

Microtubule associated proteins regulate the stability of microtubules and control processes such as cell polarity/differentiation, neurite outgrowth, cell division and organelle trafficking (1). The MARK (MAP/microtubule affinity-regulating kinases) family (MARK1-4) of serine/threonine kinases was identified based on their ability to phosphorylate microtubule-associated proteins (MAPs) including tau, MAP2 and MAP4 (2-6). MARK proteins phosphorylate MAPs within their microtubule binding domains, causing dissociation of MAPs from microtubules and increased microtubule dynamics (2-4). In the case of tau, phosphorylation has been hypothesized to contribute to the formation of neurofibrillary tangles observed in Alzheimer's disease. Overexpression of MARK leads to hyperphosphorylation of MAPs, morphological changes and cell death (4). The tumor suppressor kinase LKB1 phosphorylates MARK and the closely related AMP-kinases within their T-loops, leading to increased activity (7).

Background References

1. Drubin, D.G. and Nelson, W.J. (1996) *Cell* 84, 335-44.
2. Illenberger, S. et al. (1996) *J Biol Chem* 271, 10834-43.
3. Drewes, G. et al. (1995) *J Biol Chem* 270, 7679-88.
4. Drewes, G. et al. (1997) *Cell* 89, 297-308.
5. Kato, T. et al. (2001) *Neoplasia* 3, 4-9.
6. Trinczek, B. et al. (2004) *J Biol Chem* 279, 5915-23.
7. Lizcano, J.M. et al. (2004) *EMBO J* 23, 833-43.

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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Limited Uses

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