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NME1/NDKA (D14H1) Rabbit mAb


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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk B	Endogenous	16, 18	Rabbit IgG	#P15531	4830

Product Usage Information	Application Western Blotting	Dilution 1:1000
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	NME1/NDKA (D14H1) Rabbit mAb detects endogenous levels of total NME1/NDKA protein. This antibody is predicted to cross-react with NME2/NDKB protein.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to a region surrounding Gly19 of human NME1/NDKA protein.	
Background	The NDK/NME/NM23 kinase family (encoded by the <i>NME</i> gene family) consists of at least eight distinct proteins that exhibit different cellular localization (1). Members of this group inhibit metastasis in a variety of tumor cell types (2). All NDK/NME/NM23 proteins possess nucleoside diphosphatase kinase (NDK) activity and catalyze the phosphorylation of nucleoside diphosphate to the corresponding nucleoside triphosphate to regulate a diverse array of cellular events (3). At least four classes of NDK biochemical activities have been described, including protein-protein interactions (4-6), regulation of GTP-binding protein function (7-9), DNA-associated activities (10,11), and histidine-dependent protein phosphotransferase activity (12). NDK/NME proteins participate in the regulation of a broad spectrum of cellular responses, including development, differentiation, proliferation, endocytosis, and apoptosis (13). Because of its role in metastasis suppression and oncogenesis, NDKA (NME1/NM23-H1) has been widely studied (14). NDKA (NM23-H1) and NDKB (NM23-H2) are encoded by adjacent <i>NME1</i> and <i>NME2</i> genes and share 90% sequence identity. Two serine residues (Ser122 and Ser144) on NDKA/NM23-H1 can be phosphorylated by AMPKα1, but only phosphorylation at Ser122 determines whether NDKA channels ATP to AMPKα1. This regulates AMPKα1 activity towards ACC1, an important regulator of fatty acid metabolism (15). Mutation of NDKB/NM23-H2 at Ser122 (S122P) in melanoma cells results in altered phosphoryl transfer activity (16).	
Background References	1. Lacombe, M.L. et al. (2000) <i>J Bioenerg Biomembr</i> 32, 247-58. 2. Tee, Y.T. et al. (2006) <i>Taiwan J Obstet Gynecol</i> 45, 107-13. 3. Ishikawa, N. et al. (2003) <i>J Bioenerg Biomembr</i> 35, 7-18. 4. Paravicini, G. et al. (1996) <i>Biochem Biophys Res Commun</i> 227, 82-7. 5. Reymond, A. et al. (1999) <i>Oncogene</i> 18, 7244-52. 6. Subramanian, C. et al. (2001) <i>Nat Med</i> 7, 350-5. 7. Zhu, J. et al. (1999) <i>Proc Natl Acad Sci USA</i> 96, 14911-8. 8. Otsuki, Y. et al. (2001) <i>Proc Natl Acad Sci USA</i> 98, 4385-90. 9. Palacios, F. et al. (2002) <i>Nat Cell Biol</i> 4, 929-36. 10. Fan, Z. et al. (2003) <i>Cell</i> 112, 659-72. 11. Postel, E.H. (2003) <i>J Bioenerg Biomembr</i> 35, 31-40. 12. Wagner, P.D. and Vu, N.D. (2000) <i>Biochem J</i> 346 Pt 3, 623-30. 13. Kimura, N. et al. (2000) <i>J Bioenerg Biomembr</i> 32, 309-15. 14. Steeg, P.S. (2004) <i>J Natl Cancer Inst</i> 96, E4. 15. Crawford, R.M. et al. (2006) <i>Mol Cell Biol</i> 26, 5921-31. 16. Schaertl, S. et al. (1999) <i>J Biol Chem</i> 274, 20159-64.	

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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