

NME1/NDKA (D18F10) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	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 (D18F10) 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 Pro96 of human NME1/NDKA protein.

Background

The NDK/NME/NM23 kinase family (encoded by the *NME* 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 *NME1* and *NME2* genes and share 90% sequence identity. Two serine residues (Ser122 and Ser144) on NDKA/NM23-H1 can be phosphorylated by AMPK α 1, but only phosphorylation at Ser122 determines whether NDKA channels ATP to AMPK α 1. This regulates AMPK α 1 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) *J Bioenerg Biomembr* 32, 247-58.
2. Tee, Y.T. et al. (2006) *Taiwan J Obstet Gynecol* 45, 107-13.
3. Ishikawa, N. et al. (2003) *J Bioenerg Biomembr* 35, 7-18.
4. Paravicini, G. et al. (1996) *Biochem Biophys Res Commun* 227, 82-7.
5. Raymond, A. et al. (1999) *Oncogene* 18, 7244-52.
6. Subramanian, C. et al. (2001) *Nat Med* 7, 350-5.
7. Zhu, J. et al. (1999) *Proc Natl Acad Sci USA* 96, 14911-8.
8. Otsuki, Y. et al. (2001) *Proc Natl Acad Sci USA* 98, 4385-90.
9. Palacios, F. et al. (2002) *Nat Cell Biol* 4, 929-36.
10. Fan, Z. et al. (2003) *Cell* 112, 659-72.
11. Postel, E.H. (2003) *J Bioenerg Biomembr* 35, 31-40.
12. Wagner, P.D. and Vu, N.D. (2000) *Biochem J* 346 Pt 3, 623-30.
13. Kimura, N. et al. (2000) *J Bioenerg Biomembr* 32, 309-15.
14. Steeg, P.S. (2004) *J Natl Cancer Inst* 96, E4.
15. Crawford, R.M. et al. (2006) *Mol Cell Biol* 26, 5921-31.
16. Schaertl, S. et al. (1999) *J Biol Chem* 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

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey **B:** Bovine

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