Revision 1

Store at -20C

#3345

NME1/NDKA (D98) Antibody

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

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

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunohistochemistry (Paraffin)	1:100

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

NME1/NDKA (D98) Antibody detects endogenous levels of total NME1/NDKA protein. This antibody is predicted to cross-react with NME2/NDKB protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to Asp98 of human NME1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

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 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) *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. Reymond, 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 **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

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

Trademarks and Patents

Limited Uses