

# nm23-H1 (NM301): sc-465

## BACKGROUND

The nm23 gene, a potential suppressor of metastasis, was originally identified by differential hybridization between two murine melanoma sub-lines, one with a high and the second with a low metastatic capacity. Highly metastatic sub-lines exhibit much lower levels of nm23 than less metastatic cells. Based on sequence analysis, nm23 appears highly related to nucleoside diphosphate kinases (NDPs). In humans, NDP kinases A and B are identical to two isoforms of human nm23 homologs, namely nm23-H1 and H2, respectively. nm23-H2 is identical in sequence to PuF, a transcription factor that binds to nucleoside hypersensitive elements at positions 142-115 of the human C-Myc promotor.

## REFERENCES

1. Steeg, P.S., et al. 1988. Evidence for a novel gene associated with low tumor metastatic potential. *J. Natl. Cancer Inst.* 80: 200-209.
2. Lacombe, M., et al. 1990. Functional cloning of a nucleoside diphosphate kinase from *Dictyostelium discoideum*. *J. Biol. Chem.* 265: 10012-10018.

## CHROMOSOMAL LOCATION

Genetic locus: NME1 (human) mapping to 17q21.33; Nme1 (mouse) mapping to 11 D.

## SOURCE

nm23-H1 (NM301) is a mouse monoclonal antibody raised against purified nm23-H1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

nm23-H1 (NM301) is available conjugated to agarose (sc-465 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-465 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-465 PE), fluorescein (sc-465 FITC), Alexa Fluor® 488 (sc-465 AF488), Alexa Fluor® 546 (sc-465 AF546), Alexa Fluor® 594 (sc-465 AF594) or Alexa Fluor® 647 (sc-465 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-465 AF680) or Alexa Fluor® 790 (sc-465 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

nm23-H1 (NM301) is recommended for detection of nm23-H1 of mouse, rat and human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

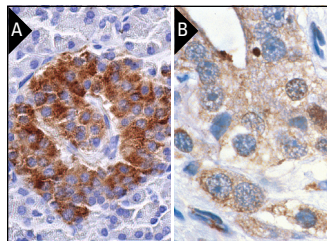
Suitable for use as control antibody for nm23-H1 siRNA (h): sc-29414, nm23-H1 siRNA (m): sc-29415, nm23-H1 shRNA Plasmid (h): sc-29414-SH, nm23-H1 shRNA Plasmid (m): sc-29415-SH, nm23-H1 shRNA (h) Lentiviral Particles: sc-29414-V and nm23-H1 shRNA (m) Lentiviral Particles: sc-29415-V.

Molecular Weight of nm23-H1: 23 kDa.

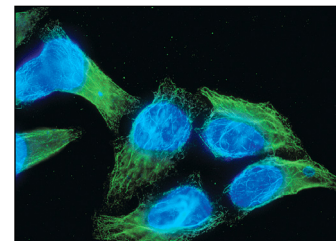
## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



nm23-H1 (NM301): sc-465. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human prostate carcinoma tissue showing cytoplasmic and nuclear localization (B).



nm23-H1 (NM301): sc-465. Immunofluorescence staining of methanol-fixed HeLa cells showing fluorescein immunostaining of cytoskeletal-associated nm23 and nuclear DAPI counterstain.

## SELECT PRODUCT CITATIONS

1. Jiang, W.G., et al. 1998. The effects of n-6 polyunsaturated fatty acids on the expression of nm-23 in human cancer cells. *Br. J. Cancer* 77: 731-738.
2. Crawford, R.M., et al. 2005. A novel physical and functional association between nucleoside diphosphate kinase A and AMP-activated protein kinase  $\alpha$ 1 in liver and lung. *Biochem. J.* 392: 201-209.
3. Curtis, C.D., et al. 2007. Interaction of the tumor metastasis suppressor nonmetastatic protein 23 homologue H1 and estrogen receptor  $\alpha$  alters estrogen-responsive gene expression. *Cancer Res.* 67: 10600-10607.
4. Conery, A.R., et al. 2010. Nucleoside diphosphate kinase Nm23-H1 regulates chromosomal stability by activating the GTPase dynamin during cytokinesis. *Proc. Natl. Acad. Sci. USA* 107: 15461-15466.
5. Li, X.R., et al. 2011. ER, PgR, HER-2, Ki-67, topoisomerase II $\alpha$ , and nm23-H1 proteins expression as predictors of pathological complete response to neoadjuvant chemotherapy for locally advanced breast cancer. *Med. Oncol.* 28: S48-S54.
6. Lee, M.J., et al. 2012. Pro-oncogenic potential of nm23-H2 in hepatocellular carcinoma. *Exp. Mol. Med.* 44: 214-224.
7. Chang, K.K., et al. 2013. NME1 suppression of endometrial stromal cells promotes angiogenesis in the endometriotic milieu via stimulating the secretion of IL-8 and VEGF. *Int. J. Clin. Exp. Pathol.* 6: 2030-2038.
8. Fiore, L.S., et al. 2014. c-Abl and Arg induce cathepsin-mediated lysosomal degradation of the nm23-H1 metastasis suppressor in invasive cancer. *Oncogene* 33: 4508-4520.
9. Chen, W., et al. 2015. The ubiquitin E3 ligase SCF-FBXO24 recognizes deacetylated nucleoside diphosphate kinase A to enhance its degradation. *Mol. Cell. Biol.* 35: 1001-1013.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.