SANTA CRUZ BIOTECHNOLOGY, INC.

nm23-H2 (X-42): sc-100400

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 nucleotide diphosphate kinases (NDP). In humans, NDP kinases A and B are identical to two isotypes of human nm23 homologs, namely nm23-H1 and H2, respectively. nm23-H2 is identical in sequence to PuF, a transcription factor that binds to nuclease-hypersensitive elements at positions 142 to 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. Kimura, N., et al. 1990. Isolation and characterization of a cDNA clone encoding rat nucleoside diphosphate kinase. J. Biol. Chem. 265: 15744-15749.

CHROMOSOMAL LOCATION

Genetic locus: NME2 (human) mapping to 17q21.33; Nme2 (mouse) mapping to 11 D.

SOURCE

nm23-H2 (X-42) is a mouse monoclonal antibody raised against recombinant nm23-H2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

nm23-H2 (X-42) is recommended for detection of nm23-H2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein 1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for nm23-H2 siRNA (h): sc-40774, nm23-H2 siRNA (m): sc-40775, nm23-H2 siRNA (r): sc-72195, nm23-H2 shRNA Plasmid (h): sc-40774-SH, nm23-H2 shRNA Plasmid (m): sc-40775-SH, nm23-H2 shRNA Plasmid (r): sc-72195-SH, nm23-H2 shRNA (h) Lentiviral Particles: sc-40774-V, nm23-H2 shRNA (m) Lentiviral Particles: sc-40775-V and nm23-H2 shRNA (r) Lentiviral Particles: sc-72195-V.

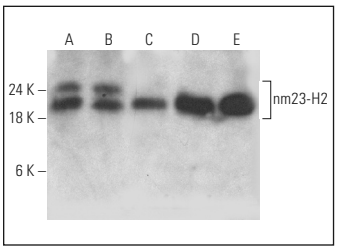
Molecular Weight of nm23-H2: 17 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or PC-12 cell lysate: sc-2250.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



nm23-H2 (X-42): sc-100400. Western blot analysis of nm23-H2 expression in Jurkat (**A**), HeLa (**B**), RAW 264.7 (**C**), NRK (**D**) and PC-12 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ou, T.M., et al. 2011. Inhibition of cell proliferation by quindoline derivative (SYUIQ-05) through its preferential interaction with c-Myc promoter G-quadruplex. J. Med. Chem. 54: 5671-5679.
2. Tso, P.H., et al. 2013. RGS19 inhibits Ras signaling through nm23-H1/2-mediated phosphorylation of the kinase suppressor of Ras. Cell. Signal. 25: 1064-1074.
3. Shan, C., et al. 2015. Chemical intervention of the nm23-H2 transcriptional programme on c-MYC via a novel small molecule. Nucleic Acids Res. 43: 6677-6691.
4. Tong, Y., et al. 2015. Metastasis suppressors nm23-H1 and nm23-H2 differentially regulate neoplastic transformation and tumorigenesis. Cancer Lett. 361: 207-217.
5. Liu, H.Y., et al. 2017. New disubstituted quindoline derivatives inhibiting Burkitt's lymphoma cell proliferation by impeding c-Myc transcription. J. Med. Chem. 60: 5438-5454.
6. Shan, C., et al. 2017. Design, synthesis, and evaluation of isaindigotone derivatives to downregulate c-Myc transcription via disrupting the interaction of nm23-H2 with G-quadruplex. J. Med. Chem. 60: 1292-1308.
7. Canesin, G., et al. 2020. Scavenging of labile heme by hemopexin is a key checkpoint in cancer growth and metastases. Cell Rep. 32: 108181.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.