

# Nucleostemin (E-8): sc-166460

## BACKGROUND

Nucleostemin, also designated nucleolar GTP-binding protein 3, is a member of the MMR1/HSR1 GTP-binding protein family. It is expressed in the nucleoli of adult CNS stem cells, primitive bone marrow cells, embryonic stem cells and in several cancer cell lines. Nucleostemin is often used as a stem cell marker. Overexpression or depletion of the protein can reduce cell proliferation in CNS stem cells. Nucleostemin shuttles between the nucleus and the nucleolus and may be important in maintaining the proliferative capacity of stem cells. Nucleostemin is important in the growth regulation of liver cancer, gastric cancer and several other cancer types. The gene encoding Nucleostemin is localized to chromosome 3p21.1.

## CHROMOSOMAL LOCATION

Genetic locus: GNL3 (human) mapping to 3p21.1.

## SOURCE

Nucleostemin (E-8) is a mouse monoclonal antibody raised against amino acids 280-549 mapping at the C-terminus of Nucleostemin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Nucleostemin (E-8) is available conjugated to agarose (sc-166460 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166460 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166460 PE), fluorescein (sc-166460 FITC), Alexa Fluor® 488 (sc-166460 AF488), Alexa Fluor® 546 (sc-166460 AF546), Alexa Fluor® 594 (sc-166460 AF594) or Alexa Fluor® 647 (sc-166460 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166460 AF680) or Alexa Fluor® 790 (sc-166460 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Nucleostemin (E-8) is recommended for detection of Nucleostemin of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Nucleostemin siRNA (h): sc-45830, Nucleostemin shRNA Plasmid (h): sc-45830-SH and Nucleostemin shRNA (h) Lentiviral Particles: sc-45830-V.

Molecular Weight of Nucleostemin: 62 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, SW480 nuclear extract: sc-2155 or HeLa nuclear extract: sc-2120.

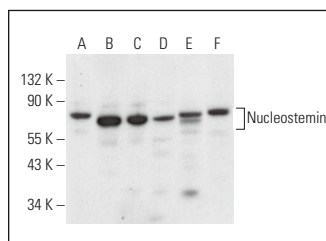
## RESEARCH USE

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

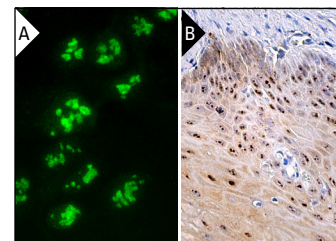
## STORAGE

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

## DATA



Nucleostemin (E-8): sc-166460. Western blot analysis of Nucleostemin expression in K-562 (A), HeLa (B) and SW480 (C) nuclear extracts and HEL 92.1.7 (D), HL-60 (E) and PC-3 (F) whole cell lysates.



Nucleostemin (E-8): sc-166460. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nucleolar localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing nucleolar and cytoplasmic staining of squamous epithelial cells (B).

## SELECT PRODUCT CITATIONS

- Rothan, H.A., et al. 2014. Three-dimensional culture environment increases the efficacy of platelet rich plasma releasate in prompting skin fibroblast differentiation and extracellular matrix formation. *Int. J. Med. Sci.* 11: 1029-1038.
- Kusuoka, O., et al. 2018. Intermittent calorie restriction enhances epithelial-mesenchymal transition through the alteration of energy metabolism in a mouse tumor model. *Int. J. Oncol.* 52: 413-423.
- Nishiguchi, Y., et al. 2019. Targeting claudin-4 enhances CDDP-chemosensitivity in gastric cancer. *Oncotarget* 10: 2189-2202.
- Gordon, J., et al. 2019. Nol9 is a spatial regulator for the human ITS2 pre-rRNA endonuclease-kinase complex. *J. Mol. Biol.* 431: 3771-3786.
- Ye, C., et al. 2020. BCCIP is required for nucleolar recruitment of eIF6 and 12S pre-rRNA production during 60S ribosome biogenesis. *Nucleic Acids Res.* 48: 12817-12832.
- Cela, I., et al. 2022. Proteomic investigation of the role of Nucleostemin in nucleophosmin-mutated OCI-AML 3 cell line. *Int. J. Mol. Sci.* 23: 7655.
- Fujiwara-Tani, R., et al. 2022. Gemcitabine resistance in pancreatic ductal carcinoma cell lines stems from reprogramming of energy metabolism. *Int. J. Mol. Sci.* 23: 7824.
- Sahu, S., et al. 2023. Nucleolar architecture is modulated by a small molecule, the inositol pyrophosphate 5-InsP<sub>7</sub>. *Biomolecules* 13: 153.
- Li, Y., et al. 2023. The ubiquitin-specific protease USP36 associates with the microprocessor complex and regulates miRNA biogenesis by SUMOylating DGCR8. *Cancer Res. Commun.* 3: 459-470.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.