

# Nucleostemin (A-8): sc-166430

## 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.

## REFERENCES

- Charpentier, A.H., et al. 2000. Effects of estrogen on global gene expression: identification of novel targets of estrogen action. *Cancer Res.* 60: 5977-5983.
- Normile, D. 2002. Cell proliferation. Common control for cancer, stem cells. *Science* 298: 1869.
- Tsai, R.Y. and McKay, R.D. 2002. A nucleolar mechanism controlling cell proliferation in stem cells and cancer cells. *Genes Dev.* 16: 2991-3003.
- Schwartz, P.H., et al. 2003. Isolation and characterization of neural progenitor cells from post-mortem human cortex. *J. Neurosci. Res.* 74: 838-851.
- Baddoo, M., et al. 2003. Characterization of mesenchymal stem cells isolated from murine bone marrow by negative selection. *J. Cell. Biochem.* 89: 1235-1249.
- Bernardi, R., et al. 2003. The nucleolus: at the stem of immortality. *Nat. Med.* 9: 24-25.
- Xu, W., et al. 2004. A novel tumor cell line cloned from mutated human embryonic bone marrow mesenchymal stem cells. *Oncol. Rep.* 12: 501-508.

## CHROMOSOMAL LOCATION

Genetic locus: GNL3 (human) mapping to 3p21.1; Gnl3 (mouse) mapping to 14 B.

## SOURCE

Nucleostemin (A-8) is a mouse monoclonal antibody raised against amino acids 269-538 mapping at the C-terminus of Nucleostemin of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> 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

Nucleostemin (A-8) is recommended for detection of Nucleostemin of mouse, rat and 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 siRNA (m): sc-45831, Nucleostemin shRNA Plasmid (h): sc-45830-SH, Nucleostemin shRNA Plasmid (m): sc-45831-SH, Nucleostemin shRNA (h) Lentiviral Particles: sc-45830-V and Nucleostemin shRNA (m) Lentiviral Particles: sc-45831-V.

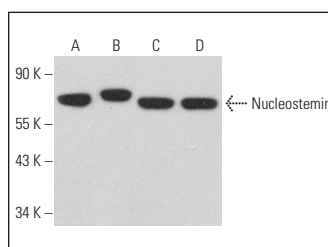
Molecular Weight of Nucleostemin: 62 kDa.

Positive Controls: SW480 nuclear extract: sc-2155, HeLa nuclear extract: sc-2120 or HL-60 whole cell lysate: sc-2209.

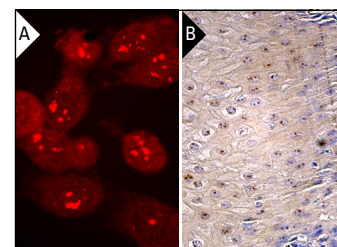
## RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Nucleostemin (A-8): sc-166430. Western blot analysis of Nucleostemin expression in SW480 (A) and HeLa (B) nuclear extracts and HEL 92.1.7 (C) and HL-60 (D) whole cell lysates.



Nucleostemin (A-8): sc-166430. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nucleolar localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing nucleolar staining of squamous epithelial cells (B).

## SELECT PRODUCT CITATIONS

- Tanabe, E., et al. 2017. Fatty acids inhibit anticancer effects of 5-fluorouracil in mouse cancer cell lines. *Oncol. Lett.* 14: 681-686.

## RESEARCH USE

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