SANTA CRUZ BIOTECHNOLOGY, INC.

Nucleostemin (C-14): sc-46212

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The Power to Question

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. It is often considered a stem cell marker. Over-expression 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. It is important in the growth regulation of liver cancer, gastric cancer and several other cancer types. The gene encoding for Nucleostemin is localized to chromosome 3p21.1.

REFERENCES

1. Charpentier, A.H., Bednarek, A.K., Daniel, R.L., Hawkins, K.A., Laflin, K.J., Gaddis, S., MacLeod, M.C. and Aldaz, C.M. 2000. Effects of estrogen on global gene expression: identification of novel targets of estrogen action. Cancer Res. 60: 5977-5983.
2. Normile, D. 2002. Cell proliferation. Common control for cancer, stem cells. Science 298: 1869.
3. 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.
4. Schwartz, P.H., Bryant, P.J., Fuja, T.J., Su, H., O'Dowd, D.K. and Klassen, H. 2003. Isolation and characterization of neural progenitor cells from post-mortem human cortex. J. Neurosci. Res. 74: 838-851.
5. Baddoo, M., Hill, K., Wilkinson, R., Gaupp, D., Hughes, C., Kopen, G.C. and Phinney, D.G. 2003. Characterization of mesenchymal stem cells isolated from murine bone marrow by negative selection. J. Cell. Biochem. 89: 1235-1249.
6. Bernardi, R. and Pandolfi, P.P. 2003. The nucleolus: at the stem of immortality. Nat. Med. 9: 24-25.
7. Xu, W., Qian, H., Zhu, W., Chen, Y., Shao, Q., Sun, X., Hu, J., Han, C. and Zhang, X. 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.

SOURCE

Nucleostemin (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Nucleostemin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46212 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Nucleostemin (C-14) is recommended for detection of Nucleostemin of 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)], immunofluorescence (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.

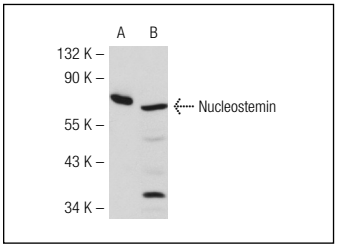
Molecular Weight of Nucleostemin: 62 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or K-562 nuclear extract: sc-2130.

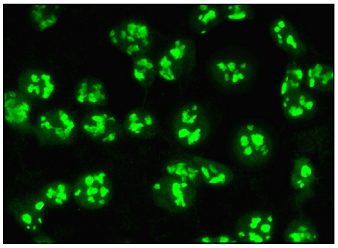
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Nucleostemin (C-14): sc-46212. Western blot analysis of Nucleostemin expression in 293T (**A**) and Hep G2 (**B**) whole cell lysates.



Nucleostemin (C-14): sc-46212. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nucleolar and nuclear localization.

STORAGE

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