SANTA CRUZ BIOTECHNOLOGY, INC.

Nup98 (2H10): sc-101546

The Power to Question

BACKGROUND

Nuclear pore complexes (NPCs) are the channels for the bi-directional movement of macromolecules between the nucleus and cytoplasm, and contain more than 100 different subunits. Many of them belong to a family called nucleoporins, which are characterized by the presence of O-linked N-acetylglucosamine moieties and a distinctive pentapeptide repeat (XFXFG). The NUP98 gene encodes precursor proteins that generate two nucleoplasmically oriented nucleoporins, Nup98 and Nup96. The O-linked glycoprotein, Nup98 is a component of the nuclear pore complex. Nup98 is essential for gastrulation, a developmental stage that is associated with rapid cell proliferation, but dispensable for basal cell growth. Nup98 plays a role in RNA export from the nucleus and it appears to be an essential component of multiple RNA export pathways. Nup98 is a member of the GLFG nucleoporin family. The t(7;11)(p15;p15) translocation in acute myeloid leukaemia fuses the genes for Nup98 and class I homeoprotein HoxA9. Nup98-HoxA9 fusion protein may promote leukemogenesis through inhibiting of HoxA9-mediated terminal differentiation and/or aberrant nucleocytoplasmic transport.

REFERENCES

1. Radu, A., et al. 1995. The peptide repeat domain of nucleoporin Nup98 functions as a docking site in transport across the nuclear pore complex. Cell 81: 215-222.
2. Borrow, J., et al. 1996. The t(7;11)(p15;p15) translocation in acute myeloid leukaemia fuses the genes for nucleoporin Nup98 and class I homeoprotein HoxA9. Nat. Genet. 12: 159-167.
3. Powers, M.A., et al. 1997. The vertebrate GLFG nucleoporin, Nup98, is an essential component of multiple RNA export pathways. J. Cell Biol. 136: 241-250.
4. Wu, X., et al. 2001. Disruption of the FG nucleoporin Nup98 causes selective changes in nuclear pore complex stoichiometry and function. Proc. Natl. Acad. Sci. USA 98: 3191-3196.
5. Fontoura, B.M., et al. 2001. The nucleoporin Nup98 associates with the intranuclear filamentous protein network of TPR. Proc. Natl. Acad. Sci. USA 98: 3208-3213.

CHROMOSOMAL LOCATION

Genetic locus: NUP98 (human) mapping to 11p15.4; Nup98 (mouse) mapping to 7 E3.

SOURCE

Nup98 (2H10) is a rat monoclonal antibody raised against a recombinant protein corresponding to amino acids 1-466 of Nup98 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2c} in 1.0 ml 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

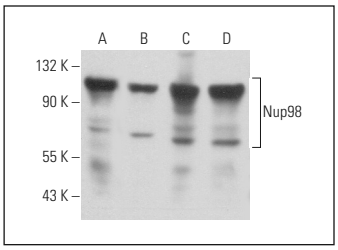
Nup98 (2H10) is recommended for detection of Nup98 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 Nup98 siRNA (h): sc-43535, Nup98 siRNA (m): sc-43536, Nup98 shRNA Plasmid (h): sc-43535-SH, Nup98 shRNA Plasmid (m): sc-43536-SH, Nup98 shRNA (h) Lentiviral Particles: sc-43535-V and Nup98 shRNA (m) Lentiviral Particles: sc-43536-V.

Molecular Weight of Nup98: 97 kDa.

Positive Controls: A-10 cell lysate: sc-3806, Neuro-2A whole cell lysate: sc-364185 or NAMALWA cell lysate: sc-2234.

DATA



Nup98 (2H10): sc-101546. Western blot analysis of Nup98 expression in K-562 (**A**), NAMALWA (**B**), Neuro-2A (**C**) and A-10 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hollink, I.H., et al. 2011. Nup98/NSD1 characterizes a novel poor prognostic group in acute myeloid leukemia with a distinct HOX gene expression pattern. Blood 118: 3645-3656.
2. Forrester, A.M., et al. 2011. Nup98-HoxA9-transgenic zebrafish develop a myeloproliferative neoplasm and provide new insight into mechanisms of myeloid leukaemogenesis. Br. J. Haematol. 155: 167-181.
3. Hayes, L.R., et al. 2020. C9orf72 arginine-rich dipeptide repeat proteins disrupt karyopherin-mediated nuclear import. Elife 9: e51685.

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.