SANTA CRUZ BIOTECHNOLOGY, INC.

Nop1p (28F2): sc-57940

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Nop1p is a phylogenetically conserved protein essential for efficient processing of pre-rRNA through its association with a class of small nucleolar RNAs during ribosomal biogenesis. Small nucleolar RNAs (snoRNAs) are associated in ribonucleoprotein particles localized to the nucleolus (snoRNPs). Nop1p (nucleolar protein 1) is structurally and functionally homologous to vertebrate fibrillarin and is essential for viability. The *Saccharomyces cerevisiae* NOP1 gene encodes a 327 amino acid protein located within nucleolar structures resembling the dense fibrillar region of mammalian nucleoli. The yeast NOP1 gene codes for a protein which contains glycine/arginine rich sequence repeats at the amino-terminus. Human fibrillarin migrates is specifically immunoprecipitated by antisera from humans with scleroderma autoimmune disease. In addition to its association with small nucleolar RNA, Nop1p is required for ribosome biogenesis.

REFERENCES

1. Schimmang, T., Tollervey, D., Kern, H., Frank, R. and Hurt, E.C. 1989. A yeast nucleolar protein related to mammalian fibrillarin is associated with small nucleolar RNA and is essential for viability. EMBO J. 8: 4015-4024.
2. Henriquez, R., Blobel, G. and Aris, J.P. 1990. Isolation and sequencing of Nop1p. A yeast gene encoding a nucleolar protein homologous to a human autoimmune antigen. J. Biol. Chem. 265: 2209-2215.
3. Aris, J.P. and Blobel, G. 1991. cDNA cloning and sequencing of human fibrillarin, a conserved nucleolar protein recognized by autoimmune antisera. Proc. Natl. Acad. Sci. USA 88: 931-935.
4. Jansen, R.P., Hurt, E.C., Kern, H., Lehtonen, H., Carmo-Fonseca, M., Lapeyre, B. and Tollervey, D. 1991. Evolutionary conservation of the human nucleolar protein fibrillarin and its functional expression in yeast. J. Cell Biol. 113: 715-729.
5. Tollervey, D., Lehtonen, H., Carmo-Fonseca, M. and Hurt, E.C. 1991. The small nucleolar RNP protein Nop1p (fibrillarin) is required for pre-rRNA processing in yeast. EMBO J. 10: 573-583.
6. Wang, H., Boisvert, D., Kim, K.K., Kim, R. and Kim, S.H. 2000. Crystal structure of a fibrillarin homologue from *Methanococcus jannaschii*, a hyperthermophile, at 1.6 A resolution. EMBO J. 19: 317-323.
7. Galardi, S., Fatica, A., Bachi, A., Scaloni, A., Presutti, C. and Bozzoni, I. 2002. Purified box C/D snoRNPs are able to reproduce site-specific 2'-O-methylation of target RNA *in vitro*. Mol. Cell. Biol. 22: 6663-6668.

SOURCE

Nop1p (28F2) is a mouse monoclonal antibody raised against a nuclear preparation of *S. cerevisiae* origin.

PRODUCT

Each vial contains 250 µl culture supernatant containing IgG_3 with PBS and < 0.1% sodium azide.

RESEARCH USE

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

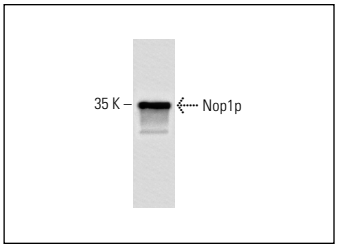
APPLICATIONS

Nop1p (28F2) is recommended for detection of Nop1p of *S. cerevisiae* origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:500-1:2500), immunoprecipitation [10-20 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:1000-1:10000).

Molecular Weight of Nop1p: 38 kDa.

Positive Controls: yeast cell extract.

DATA



Nop1p (28F2): sc-57940. Western blot analysis of Nop1p expression in yeast cell extract.

SELECT PRODUCT CITATIONS

1. Kimura, A., Kato, Y. and Hirano, H. 2012. N-myristoylation of the Rpt2 subunit regulates intracellular localization of the yeast 26S proteasome. Biochemistry 51: 8856-8866.
2. de Los Santos-Velázquez, A.I., de Oya, I.G., Manzano-López, J. and Monje-Casas, F. 2017. Late rDNA condensation ensures timely cdc14 release and coordination of mitotic exit signaling with nucleolar segregation. Curr. Biol. 27: 3248-3263.e5.
3. Becker, D., Hirsch, A.G., Bender, L., Lingner, T., Salinas, G. and Krebber, H. 2019. Nuclear pre-snRNA export is an essential quality assurance mechanism for functional spliceosomes. Cell Rep. 27: 3199-3214.e3.
4. Klama, S., Hirsch, A.G., Schneider, U.M., Zander, G., Seel, A. and Krebber, H. 2022. A guard protein mediated quality control mechanism monitors 5'-capping of pre-mRNAs. Nucleic Acids Res. E-published.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PROTOCOLS

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