

Nop5p/Nop56p (37C12): sc-57943

BACKGROUND

Nop1p (nucleolar protein 1) 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 is structurally and functionally homologous to vertebrate Fibrillarin and is essential for viability. The *Saccharomyces cerevisiae* NOP1 gene encodes a protein resembling the dense fibrillar region of mammalian nucleoli. Nop5p functions with Nop1p in the execution of early pre-rRNA processing steps that lead to formation of 18 S rRNA. In *Archaea*, Fibrillarin and Nop5p comprise the core complex of box C/D snoRNAs, which are responsible for site-specific 2'-hydroxyl methylation of ribosomal and transfer RNAs. Nop56p is a component of the box C/D small nucleolar ribonucleoprotein complexes that direct 2'-O-methylation of pre-rRNA during its maturation.

REFERENCES

1. Gautier, T. et al. 1997. Nucleolar KKE/D repeat proteins Nop56p and Nop58p interact with Nop1p and are required for ribosome biogenesis. *Mol. Cell. Biol.* 17: 7088-7098.
2. Lafontaine, D.L., et al. 2000. Synthesis and assembly of the box C/D small nucleolar RNPs. *Mol. Cell. Biol.* 20: 2650-2659.
3. Nelson, S.A., et al. 2000. Multiple growth factor induction of a murine early response gene that complements a lethal defect in yeast ribosome biogenesis. *J. Biol. Chem.* 275: 13835-13841.
4. Verheggen, C., et al. 2001. Box C/D small nucleolar RNA trafficking involves small nucleolar RNP proteins, nucleolar factors and a novel nuclear domain. *EMBO J.* 20: 5480-5490.
5. Aittaleb, M., et al. 2003. Structure and function of archaeal box C/D sRNP core proteins. *Nat. Struct. Biol.* 10: 256-263.
6. Hayano, T. et al. 2003. Proteomic analysis of human Nop56p-associated pre-ribosomal ribonucleoprotein complexes. Possible link between Nop56p and the nucleolar protein treacle responsible for Treacher Collins syndrome. *J. Biol. Chem.* 278: 34309-34319.
7. Bortolin, M.L., et al. 2003. *In vitro* RNP assembly and methylation guide activity of an unusual box C/D RNA, *cis*-acting archaeal pre-tRNA (Trp). *Nucleic Acids Res.* 31: 6524-6535.
8. Aittaleb, M., et al. 2004. Structural and thermodynamic evidence for a stabilizing role of Nop5p in S-adenosyl-L-methionine binding to Fibrillarin. *J. Biol. Chem.* 279: 41822-41829.
9. Hardin, J.W., et al. 2006. The bipartite architecture of the sRNA in an archaeal box C/D complex is a primary determinant of specificity. *Nucleic Acids Res.* 34: 5039-5051.

SOURCE

Nop5p/Nop56p (37C12) is a mouse monoclonal antibody raised against yeast nuclear protein preparations.

PRODUCT

Each vial contains 500 µl culture supernatant containing IgG₁ in PBS with < 0.1% sodium azide.

APPLICATIONS

Nop5p/Nop56p (37C12) is recommended for detection of Nop5p and Nop56p of *Saccharomyces cerevisiae* origin by immunoprecipitation [2-4 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:5000-1:25000).

Molecular Weight of Nop5p/Nop56p: 66 kDa.

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.

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.