

NIP7 (h): 293 Lysate: sc-112267

BACKGROUND

Ribosomes, the organelles that catalyze protein synthesis, are composed of a small subunit (40S) and a large subunit (60S) that consist of over 80 distinct ribosomal proteins. Mammalian ribosomal proteins are encoded by multigene families that contain processed pseudogenes and one functional intron-containing gene within their coding regions. NIP7 is a nucleolar protein involved in ribosome biogenesis, specifically 27S pre-rRNA processing and 60S ribosome subunit assembly in *Saccharomyces cerevisiae*. NIP7 is a conserved protein among eukaryotes, including human, mouse, rat and porcine, that is essential for cell growth. In humans, NIP7 interacts with the Shwachman-Bodian-Diamond syndrome (SBDS) protein, which mediates accurate gene expression essential for proper brain, skeletal and blood cell development. Mutations in the SBDS gene results in an autosomal disorder (SDS) characterized by pleiotropic phenotypes, including pancreatic, skeletal and bone marrow deficiencies, and predisposition to hematological dysfunctions.

REFERENCES

1. Zanchin, N.I., Roberts, P., DeSilva, A., Sherman, F. and Goldfarb, D.S. 1997. *Saccharomyces cerevisiae* NIP7p is required for efficient 60S ribosome subunit biogenesis. *Mol. Cell. Biol.* 17: 5001-5015.
2. Zanchin, N.I. and Goldfarb, D.S. 1999. NIP7p interacts with Nop8p, an essential nucleolar protein required for 60S ribosome biogenesis, and the exosome subunit Rrp43p. *Mol. Cell. Biol.* 19: 1518-1525.
3. Andersen, J.S., Lyon, C.E., Fox, A.H., Leung, A.K., Lam, Y.W., Steen, H., Mann, M. and Lamond, A.I. 2002. Directed proteomic analysis of the human nucleolus. *Curr. Biol.* 12: 1-11.
4. Liu, J.F., Wang, X.Q., Wang, Z.X., Chen, J.R., Jiang, T., An, X.M., Chang, W.R. and Liang, D.C. 2004. Crystal structure of KD93, a novel protein expressed in human hematopoietic stem/progenitor cells. *J. Struct. Biol.* 148: 370-374.
5. Coltri, P.P., Guimarães, B.G., Granato, D.C., Luz, J.S., Teixeira, E.C., Oliveira, C.C. and Zanchin, N.I. 2007. Structural insights into the interaction of the NIP7 PUA domain with polyuridine RNA. *Biochemistry* 46: 14177-14187.
6. Hesling, C., Oliveira, C.C., Castilho, B.A. and Zanchin, N.I. 2007. The Shwachman-Bodian-Diamond syndrome associated protein interacts with HsNIP7 and its down-regulation affects gene expression at the transcriptional and translational levels. *Exp. Cell Res.* 313: 4180-4195.
7. Liu, G.Y. and Xiong, Y.Z. 2007. Isolation, sequence analysis and expression profile of a novel porcine gene, NIP7, differentially expressed in the longissimus dorsi muscle tissues from Meishan, Meishan x Large White cross and Large White pigs. *Mol. Biol. Rep.* 34: 213-219.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: NIP7 (human) mapping to 16q22.1.

PRODUCT

NIP7 (h): 293 Lysate represents a lysate of human NIP7 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

NIP7 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive NIP7 antibodies. Recommended use: 10-20 µl per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

RESEARCH USE

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