SANTA CRUZ BIOTECHNOLOGY, INC.

Nop14 (C-3): sc-398724

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Nop14 (nucleolar protein 14), also known as NOL14, is a 857 amino acid nuclear protein that belongs to the NOP14 family. Existing as two alternatively spliced isoforms, Nop14 is a component of the ribosomal small subunit (SSU) processome. While it is involved in nucleolar processing of pre-18S ribosomal RNA, Nop14 also plays a role in the nuclear export of the 40S pre-ribosomal subunit to the cytoplasm. The gene that encodes Nop14 consists of about 25,459 bases and maps to human chromosome 4p16.3. Chromosome 4 represents approximately 6% of the human genome and contains nearly 900 genes. Notably, the Huntingtin gene, which is found to encode an expanded glutamine tract in cases of Huntington's disease, is encoded by a gene that maps to chromosome 4. FGFR-3 is also encoded by a gene located on chromosome 4 and has been associated with thanatophoric dwarfism, achondroplasia, Muenke syndrome and bladder cancer. Chromosome 4 is also tied to Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Bonaventure, J., et al. 1996. Common mutations in the fibroblast growth factor receptor 3 (FGFR 3) gene account for achondroplasia, hypochondroplasia, and thanatophoric dwarfism. Am. J. Med. Genet. 63: 148-154.
2. Kalchman, M.A., et al. 1996. Huntingtin is ubiquitinated and interacts with a specific ubiquitin-conjugating enzyme. J. Biol. Chem. 271: 19385-19394.
3. Howard, T.D., et al. 1997. Autosomal dominant postaxial polydactyly, nail dystrophy, and dental abnormalities map to chromosome 4p16, in the region containing the Ellis-van Creveld syndrome locus. Am. J. Hum. Genet. 61: 1405-1412.
4. Singhrao, S.K., et al. 1998. Huntingtin protein colocalizes with lesions of neurodegenerative diseases: an investigation in Huntington's, Alzheimer's, and Pick's diseases. Exp. Neurol. 150: 213-222.
5. Krakow, D., et al. 2000. Exclusion of the Ellis-van Creveld region on chromosome 4p16 in some families with asphyxiating thoracic dystrophy and short-rib polydactyly syndromes. Eur. J. Hum. Genet. 8: 645-648.

CHROMOSOMAL LOCATION

Genetic locus: NOP14 (human) mapping to 4p16.3; Nop14 (mouse) mapping to 5 B2.

SOURCE

Nop14 (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 111-140 within an internal region of NOP14 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398724 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Nop14 (C-3) is recommended for detection of NOP14 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 NOP14 siRNA (h): sc-89219, Nop14 siRNA (m): sc-150030, NOP14 shRNA Plasmid (h): sc-89219-SH, Nop14 shRNA Plasmid (m): sc-150030-SH, NOP14 shRNA (h) Lentiviral Particles: sc-89219-V and Nop14 shRNA (m) Lentiviral Particles: sc-150030-V.

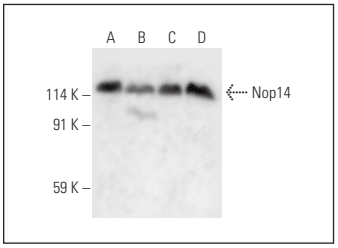
Molecular Weight of Nop14 isoforms: 98/91 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or Jurkat nuclear extract: sc-2132.

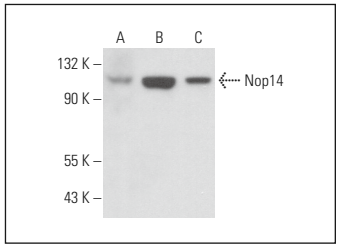
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Nop14 (C-3): sc-398724. Western blot analysis of Nop14 expression in HeLa (**A**) and Jurkat (**B**) whole cell lysates and HeLa (**C**) and Jurkat (**D**) nuclear extracts.



Nop14 (C-3): sc-398724. Western blot analysis of Nop14 expression in HeLa (**A**), TK-1 (**B**) and RAW 264.7 (**C**) whole cell lysates.

STORAGE

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

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.