SANTA CRUZ BIOTECHNOLOGY, INC.

NASP (A-6): sc-398379

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Histones, the chief components of chromatin, are required for the formation of core nucleosomes around which DNA can wind and they play an essential role in DNA condensation and gene regulation. The transport of histones to the nucleus is crucial to ensuring proper nucleosome assembly and, ultimately, DNA replication. NASP (nuclear autoantigenic sperm protein) is a 788 amino acid protein that localizes to both the nucleus and the cytoplasm and contains three TPR repeats. Expressed as multiple alternatively-spliced isoforms, one of which is testis- and sperm-specific (tNASP) and the other expressed in somatic cells (sNASP), NASP functions as a Histone H1 binding protein that mediates histone transport to the nucleus and is required for normal cell cycle progression and cellular proliferation. Due to its testicular expression and important role in DNA replication and cell cycle events, NASP is necessary for spermatogenesis and normal development. Upon DNA damage, NASP may be phosphorylated by ATM or ATR.

REFERENCES

1. Batova, I. and O'Rand, M.G. 1996. Histone-binding domains in a human nuclear autoantigenic sperm protein. Biol. Reprod. 54: 1238-1244.
2. Batova, I.N., et al. 2000. Analysis of the autoimmune epitopes on human testicular NASP using recombinant and synthetic peptides. Clin. Exp. Immunol. 121: 201-209.
3. Richardson, R.T., et al. 2000. Characterization of the Histone H1-binding protein, NASP, as a cell cycle-regulated somatic protein. J. Biol. Chem. 275: 30378-30386.
4. Minami, N., et al. 2001. Analysis of gene expression in mouse 2-cell embryos using fluorescein differential display: comparison of culture environments. Biol. Reprod. 64: 30-35.
5. Richardson, R.T., et al. 2001. Comparison of mouse and human NASP genes and expression in human transformed and tumor cell lines. Gene 274: 67-75.
6. Alekseev, O.M., et al. 2003. Overexpression of the linker histone-binding protein tNASP affects progression through the cell cycle. J. Biol. Chem. 278: 8846-8852.

CHROMOSOMAL LOCATION

Genetic locus: NASP (human) mapping to 1p34.1; Nasp (mouse) mapping to 4 D1.

SOURCE

NASP (A-6) is a mouse monoclonal antibody raised against amino acids 489-788 mapping at the C-terminus of NASP 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.

RESEARCH USE

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

APPLICATIONS

NASP (A-6) is recommended for detection of NASP 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 NASP siRNA (h): sc-78745, NASP siRNA (m): sc-149837, NASP shRNA Plasmid (h): sc-78745-SH, NASP shRNA Plasmid (m): sc-149837-SH, NASP shRNA (h) Lentiviral Particles: sc-78745-V and NASP shRNA (m) Lentiviral Particles: sc-149837-V.

Molecular Weight of tNASP: 138 kDa.

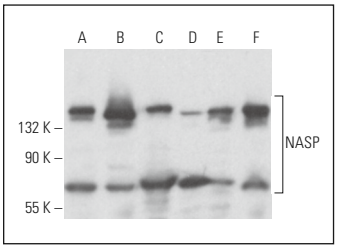
Molecular Weight of sNASP: 62 kDa.

Positive Controls: A549 cell lysate: sc-2413, THP-1 cell lysate: sc-2238 or F9 cell lysate: sc-2245.

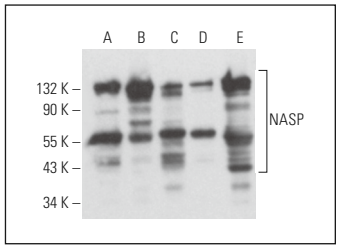
RECOMMENDED SUPPORT REAGENTS

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



NASP (A-6): sc-398379. Western blot analysis of NASP expression in A549 (**A**), F9 (**B**), Daudi (**C**), M1 (**D**) and PC-12 (**E**) whole cell lysates and human testis tissue extract (**F**).



NASP (A-6): sc-398379. Western blot analysis of NASP expression in THP-1 (**A**), F9 (**B**), NIH/3T3 (**C**) and KNRK (**D**) whole cell lysates and rat testis tissue extract (**E**).

SELECT PRODUCT CITATIONS

1. Chen, T.W., et al. 2016. Over-expression of Stomatin causes syncytium formation in nonfusogenic JEG-3 choriocarcinoma placental cells. Cell Biol. Int. 40: 926-933.

STORAGE

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