SANTA CRUZ BIOTECHNOLOGY, INC.

TNP1 (S-13): sc-169653

BACKGROUND

TNP1 (transition protein 1), also known as TP1 or STP1 (spermatid nuclear transition protein 1), is a 55 amino acid nuclear protein that belongs to the nuclear transition protein family. Expressed specifically in the testis, TNP1 is a spermatid-specific protein that functions as a basic chromosomal transition protein during the conversion of nucleosomal chromatin to the compact, non-nucleosomal form found in sperm nuclei. During spermatogensis, TNP1, a product of the haploid genome, replaces histone and is subsequently replaced by protamines in mature sperm. Although TNP1 is present for only a short amount of time during sperm maturation, it is thought to play an essential role in male fertility.

REFERENCES

1. Luerssen, H., Mattei, M.G., Schröter, M., Grzeschik, K.H., Adham, I.M. and Engel, W. 1990. Nucleotide sequence of the gene for human transition protein 1 and its chromosomal localization on chromosome 2. Genomics 8: 324-330.
2. Yelick, P.C., Kozak, C., Kwon, Y.K., Seldin, M.F. and Hecht, N.B. 1991. The mouse transition protein 1 gene contains a B1 repetitive element and is located on chromosome 1. Genomics 11: 687-694.
3. Yu, Y.E., Zhang, Y., Unni, E., Shirley, C.R., Deng, J.M., Russell, L.D., Weil, M.M., Behringer, R.R. and Meistrich, M.L. 2000. Abnormal spermatogenesis and reduced fertility in transition nuclear protein 1-deficient mice. Proc. Natl. Acad. Sci. USA 97: 4683-4688.
4. Meistrich, M.L., Mohapatra, B., Shirley, C.R. and Zhao, M. 2003. Roles of transition nuclear proteins in spermiogenesis. Chromosoma 111: 483-488.
5. Miyagawa, Y., Nishimura, H., Tsujimura, A., Matsuoka, Y., Matsumiya, K., Okuyama, A., Nishimune, Y. and Tanaka, H. 2005. Single-nucleotide polymorphisms and mutation analyses of the TNP1 and TNP2 genes of fertile and infertile human male populations. J. Androl. 26: 779-786.
6. Tüttelmann, F., Rajpert-De Meyts, E., Nieschlag, E. and Simoni, M. 2007. Gene polymorphisms and male infertility—a meta-analysis and literature review. Reprod. Biomed. Online 15: 643-658.
7. Okada, Y., Scott, G., Ray, M.K., Mishina, Y. and Zhang, Y. 2007. Histone demethylase JHDM2A is critical for Tnp1 and Prm1 transcription and spermatogenesis. Nature 450: 119-123.
8. Mitchell, V., Lefebvre-Khalil, V., Thomas, P., Rigot, J.M. and Steger, K. 2007. Transition protein 1 mRNA expression is not related to pregnancy rate in azoospermic men undergoing TESE-ICSI. Andrologia 39: 124-127.

CHROMOSOMAL LOCATION

Genetic locus: TNP1 (human) mapping to 2q35; Tnp1 (mouse) mapping to 1 C3.

STORAGE

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

SOURCE

TNP1 (S-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of TNP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-169653 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TNP1 (S-13) is recommended for detection of TNP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with TNP2.

Suitable for use as control antibody for TNP1 siRNA (h): sc-106912, TNP1 siRNA (m): sc-154544, TNP1 shRNA Plasmid (h): sc-106912-SH, TNP1 shRNA Plasmid (m): sc-154544-SH, TNP1 shRNA (h) Lentiviral Particles: sc-106912-V and TNP1 shRNA (m) Lentiviral Particles: sc-154544-V.

Molecular Weight of TNP1: 6 kDa.

Positive Controls: 721 B whole cell lysate.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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