

Protamine 2 (N-20): sc-23102

BACKGROUND

Protamines are small, arginine-rich (basic) nuclear proteins that mediate normal sperm head condensation and DNA stabilization. Mice, humans, and certain fish have two or more different protamines, whereas the sperm of bull, boar, rat, rabbit, guinea pig, and ram have one form of protamine. The majority of DNA in human sperm is bound to protamines with only a small proportion of DNA bound to histones in a way similar to active chromatin. The retention of histone association with sperm DNA with respect to protamine association to sperm DNA can change within as little as 400 bp of DNA, suggesting that there is fine control over haploid DNA organization. Protamines eventually replace histones late in the haploid phase of spermatogenesis. The human Protamine 1 gene maps to chromosome 16p13.13 and encodes a 51 amino acid protein. The human Protamine 2 gene maps to chromosome 16p13.13 and encodes a 102 amino acid protein.

REFERENCES

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- Gardiner-Garden, M., et al. 1998. Histone- and protamine-DNA association: conservation of different patterns within the β -globin domain in human sperm. *Mol. Cell. Biol.* 18: 3350-3356.
- Zhong, J., et al. 2001. A highly conserved sequence essential for translational repression of the Protamine 1 messenger RNA in murine spermatids. *Biol. Reprod.* 64: 1784-1789.
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- Murase, K., et al. 2001. Protamine augments stretch induced calcium increase in vascular endothelium. *Br. J. Pharmacol.* 134: 1403-1410.
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- Mengual, L., et al. 2003. Marked differences in protamine content and P1/P2 ratios in sperm cells from Percoll fractions between patients and controls. *J. Androl.* 24: 438-447.

CHROMOSOMAL LOCATION

Genetic locus: PRM2 (human) mapping to 16p13.13; Prm2 (mouse) mapping to 16 A1.

SOURCE

Protamine 2 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Protamine 2 of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-23102 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Protamine 2 (N-20) is recommended for detection of Protamine 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

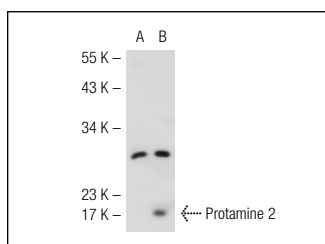
Suitable for use as control antibody for Protamine 2 siRNA (h): sc-38205, Protamine 2 siRNA (m): sc-38206, Protamine 2 shRNA Plasmid (h): sc-38205-SH, Protamine 2 shRNA Plasmid (m): sc-38206-SH, Protamine 2 shRNA (h) Lentiviral Particles: sc-38205-V and Protamine 2 shRNA (m) Lentiviral Particles: sc-38206-V.

Molecular Weight (predicted) of Protamine 2: 13 kDa.

Molecular Weight (observed) of Protamine 2: 22 kDa.

Positive Controls: PC-3 cell lysate: sc-2220 or Protamine 2 (h): 293T Lysate: sc-112549.

DATA



Protamine 2 (N-20): sc-23102. Western blot analysis of Protamine 2 expression in non-transfected: sc-117752 (A) and human Protamine 2 transfected: sc-112549 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Zheng, J., et al. 2008. Erasure of the paternal transcription program during spermiogenesis: the first step in the reprogramming of sperm chromatin for zygotic development. *Dev. Dyn.* 237: 1463-1476.

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.