

# Protamine 2 (C-14): sc-23104

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: PRM1 (human) mapping to 16p13.13; Prm1 (mouse) mapping to 16 A1.

## SOURCE

Protamine 2 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Protamine 2 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-23104 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

Protamine 2 (C-14) 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 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 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.

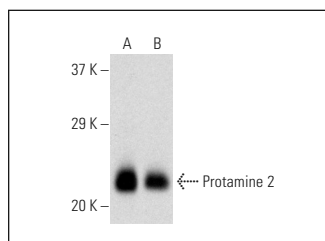
Molecular Weight (observed) of Protamine 2: 22 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, mouse testis extract: sc-2405 or rat testis extract: sc-2400.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



Protamine 2 (C-14): sc-23104. Western blot analysis of Protamine 2 expression in rat testis (A) and mouse testis (B) tissue extracts.

## SELECT PRODUCT CITATIONS

- Hager, M., et al. 2005. Laminin  $\alpha$ -1 chain corrects male infertility caused by absence of Laminin  $\alpha$ -2 chain. *Am. J. Pathol.* 167: 823-833.
- Poon, H.K., et al. 2009. Absence of paternal accessory sex gland secretions disturbs epigenetic reprogramming and expression of Igf2 and Dlk1 in golden hamster embryos. *Theriogenology* 71: 1367-1380.
- Xu, W.M., et al. 2011. Defective CFTR-dependent CREB activation results in impaired spermatogenesis and azoospermia. *PLoS ONE* 6: e19120.
- Esakky, P., et al. 2013. Molecular analysis of cell type-specific gene expression profile during mouse spermatogenesis by laser microdissection and qRT-PCR. *Reprod. Sci.* 20: 238-252.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.