

# BOULE (Q-14): sc-51043

## BACKGROUND

Spermatogenesis represents the intricate developmental process of mitotic and meiotic cell divisions that ultimately leads to the production of haploid spermatozoa. BOULE, a member of the human deleted in azoospermia (DAZ) family, functions as a key conserved switch that regulates the progression of germ cells through meiosis in man. BOULE is an RNA-binding protein that regulates the expression of *twine*, a Cdc25 phosphatase, which promotes progression through meiosis. BOULE is expressed not only in the testis, but also in the nervous system, where it may play a role in neural communication. Mutations in the BOULE gene are associated with male infertility, and the relative proportions of the three BOULE isoforms (B1, B2 and B3) may function as predictive markers for meiotic efficiency.

## REFERENCES

- Xu, E.Y., Lee, D.F., Klebes, A., Turek, P.J., Kornberg, T.B. and Reijo Pera, R.A. 2002. Human BOULE gene rescues meiotic defects in infertile flies. *Hum. Mol. Genet.* 12: 169-175.
- Joiner, M.L. and Wu, C.F. 2004. Nervous system function for the testis RNA-binding protein BOULE in *Drosophila*. *J. Neurogenet.* 18: 341-363.
- Luetjens, C.M., Xu, E.Y., Reijo Pera, R.A., Kamischke, A., Nieschlag, E. and Gromoll, J. 2004. Association of meiotic arrest with lack of BOULE protein expression in infertile men. *J. Clin. Endocrinol. Metab.* 89: 1926-1933.
- Ezeh, U.I., Turek, P.J., Reijo, R.A. and Clark, A.T. 2005. Human embryonic stem cell genes Oct-4, Nanog, STELLAR, and GDF-3 are expressed in both seminoma and breast carcinoma. *Cancer* 104: 2255-2265.
- Lin, Y.M., Kuo, P.L., Lin, Y.H., Teng, Y.N. and Nan Lin, J.S. 2005. Messenger RNA transcripts of the meiotic regulator BOULE in the testis of azoospermic men and their application in predicting the success of sperm retrieval. *Hum. Reprod.* 20: 782-788.
- Urano, J., Fox, M.S. and Reijo Pera, R.A. 2005. Interaction of the conserved meiotic regulators, BOULE (BOL) and Pumilio 2 (PUM2). *Mol. Reprod. Dev.* 71: 290-298.
- Westerveld, G.H., Repping, S., Leschot, N.J., van der Veen, F. and Lombardi, M.P. 2005. Mutations in the human BOULE gene are not a major cause of impaired spermatogenesis. *Fertil. Steril.* 83: 513-515.
- Tung, J.Y., Luetjens, C.M., Wistuba, J., Xu, E.Y., Reijo Pera, R.A. and Gromoll, J. 2006. Evolutionary comparison of the reproductive genes, DAZL and BOULE, in primates with and without DAZ. *Dev. Genes Evol.* 216: 158-168.
- Wistuba, J., Luetjens, C.M., Wesselmann, R., Nieschlag, E., Simoni, M. and Schlatt, S. 2006. Meiosis in autologous ectopic transplants of immature testicular tissue grafted to *Callithrix jacchus*. *Biol. Reprod.* 74: 706-713.

## CHROMOSOMAL LOCATION

Genetic locus: BOLL (human) mapping to 2q33.1; Boll (mouse) mapping to 1 C1.2.

## RESEARCH USE

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

## SOURCE

BOULE (Q-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BOULE 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-51043 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

BOULE (Q-14) is recommended for detection of BOULE 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).

BOULE (Q-14) is also recommended for detection of BOULE in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for BOULE siRNA (h): sc-60280, BOULE siRNA (m): sc-60281, BOULE shRNA Plasmid (h): sc-60280-SH, BOULE shRNA Plasmid (m): sc-60281-SH, BOULE shRNA (h) Lentiviral Particles: sc-60280-V and BOULE shRNA (m) Lentiviral Particles: sc-60281-V.

Molecular Weight of BOULE: 31 kDa.

Positive Controls: SW-13 cell lysate: sc-24778, human liver tissue extract or NTERA-2cl. D1 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.

## STORAGE

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

## PROTOCOLS

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