SANTA CRUZ BIOTECHNOLOGY, INC.

Dmc1 (H-100): sc-22768

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNA repair proteins are necessary for the maintenance of chromosome integrity and are involved in the elimination of premutagenic lesions from DNA. The DNA repair proteins Rad51 and Rad52 are key components of the double-strand-break repair (DSBR) pathway. Rad51 is essential for mitotic and meiotic recombination, and its mutation in yeast and mammalian cells results in chromosome loss. Overexpression of Rad52 confers resistance to ionizing radiation and induces homologous intrachromosomal recombination. Rad52 is thought to be involved in an early stage of Rad51-mediated recombination. Additional proteins involved in the pathway include Nibrin and Dmc1. Nibrin, which complexes with Mre11 and Rad50, is absent in Nijemegen breakage syndrome (NBS) patients. Dmc1 is specifically involved in meiotic recombination. An alternative spliced form of Dmc1, designated Dmc1-D, is deleted for a region between the two motifs involved in nucleotide binding. The alternatively spliced Dmc1-D transcript is detected in both male and female germ cells, indicating that the encoded protein may have a role in mammalian genetic recombination in meiosis.

CHROMOSOMAL LOCATION

Genetic locus: DMC1 (human) mapping to 22q13.1; Dmc1 (mouse) mapping to 15 E1.

SOURCE

Dmc1 (H-100) is a rabbit polyclonal antibody raised against amino acids 1-100 of Dmc1 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.

APPLICATIONS

Dmc1 (H-100) is recommended for detection of Dmc1 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).

Dmc1 (H-100) is also recommended for detection of Dmc1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Dmc1 siRNA (h): sc-37392, Dmc1 siRNA (m): sc-37393, Dmc1 shRNA Plasmid (h): sc-37392-SH, Dmc1 shRNA Plasmid (m): sc-37393-SH, Dmc1 shRNA (h) Lentiviral Particles: sc-37392-V and Dmc1 shRNA (m) Lentiviral Particles: sc-37393-V.

Molecular Weight of Dmc1: 37 kDa.

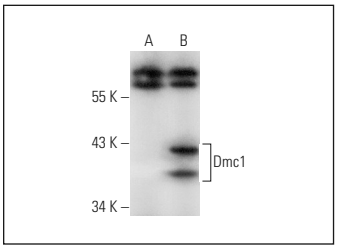
Molecular Weight of Dmc1-D: 31 kDa.

Positive Controls: Dmc1 (h3): 293T Lysate: sc-128471, rat testis extract: sc-2400 or human testis extract: sc-363781.

STORAGE

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

DATA



Dmc1 (H-100): sc-22768. Western blot analysis of Dmc1 expression in non-transfected: sc-117752 (**A**) and human Dmc1 transfected: sc-128471 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Roig, I., et al. 2010. Mouse TRIP13/PCH2 is required for recombination and normal higher-order chromosome structure during meiosis. PLoS Genet. 6: e1001062.
2. Llano, E., et al. 2012. Meiotic cohesin complexes are essential for the formation of the axial element in mice. J. Cell Biol. 197: 877-885.
3. Morozumi, Y., et al. 2012. Human PSF concentrates DNA and stimulates duplex capture in DMC1-mediated homologous pairing. Nucleic Acids Res. 40: 3031-3041.
4. Cole, F., et al. 2012. Homeostatic control of recombination is implemented progressively in mouse meiosis. Nat. Cell Biol. 14: 424-430.
5. Evron, A., et al. 2012. Human amniotic epithelial cells differentiate into cells expressing germ cell specific markers when cultured in medium containing serum substitute supplement. Reprod. Biol. Endocrinol. 10: 108.

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.