

MND1 (C-14): sc-161863

BACKGROUND

MND1 (meiotic nuclear division protein 1 homolog), also known as GAJ, is a 205 amino acid nuclear protein required for proper homologous chromosome pairing and meiotic double-strand break repair. Belonging to the MND1 family, MND1 localizes to chromatin during meiotic prophase and preferentially binds double-stranded DNA. MND1 forms a stable heterodimeric complex with HOP2, which binds DNA to activate the recombinase activity of DMC1 and RAD51. Disruption of the MND1-HOP2 complex leads to failure in meiotic recombination and extreme defects in homologous chromosome synapsis. MND1 is encoded by a gene that maps to human chromosome 4, which houses nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Tsubouchi, H., et al. 2002. The MND1 protein forms a complex with HOP2 to promote homologous chromosome pairing and meiotic double-strand break repair. *Mol. Cell. Biol.* 22: 3078-3088.
2. Dobson, C.M., et al. 2002. Identification of the gene responsible for the CblA complementation group of vitamin B12-responsive methylmalonic acidemia based on analysis of prokaryotic gene arrangements. *Proc. Natl. Acad. Sci. USA* 99: 15554-15559.
3. Velinov, M., et al. 2005. Polycystic kidneys and del(4)(q21.1q21.3): further delineation of a distinct phenotype. *Eur. J. Med. Genet.* 48: 51-55.
4. Enomoto, R., et al. 2006. Stimulation of DNA strand exchange by the human TBPIP/HOP2-MND1 complex. *J. Biol. Chem.* 281: 5575-5581.
5. Chi, P., et al. 2007. Bipartite stimulatory action of the HOP2-MND1 complex on the RAD51 recombinase. *Genes Dev.* 21: 1747-1757.
6. Pezza, R.J., et al. 2007. HOP2/MND1 acts on two critical steps in Dmc1-promoted homologous pairing. *Genes Dev.* 21: 1758-1766.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611422. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Ca da , D.N., et al. 2008. A Turkish family with Ellis-van Creveld syndrome in six siblings; linkage analysis on 4p16 region (D4S3360-D4S2366). *Genet. Couns.* 19: 387-395.

CHROMOSOMAL LOCATION

Genetic locus: MND1 (human) mapping to 4q31.3; Mnd1 (mouse) mapping to 3 F1.

SOURCE

MND1 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of MND1 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-161863 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-161863 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MND1 (C-14) is recommended for detection of MND1 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).

MND1 (C-14) is also recommended for detection of MND1 in additional species, including equine, canine, bovine and porcine.

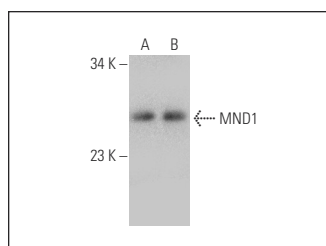
Suitable for use as control antibody for MND1 siRNA (h): sc-89043, MND1 siRNA (m): sc-149487, MND1 shRNA Plasmid (h): sc-89043-SH, MND1 shRNA Plasmid (m): sc-149487-SH, MND1 shRNA (h) Lentiviral Particles: sc-89043-V and MND1 shRNA (m) Lentiviral Particles: sc-149487-V.

MND1 (C-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of MND1: 24 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132 or K-562 nuclear extract: sc-2130.

DATA



MND1 (C-14): sc-161863. Western blot analysis of MND1 expression in Jurkat (A) and K-562 (B) nuclear extracts.

STORAGE

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

MONOS
Satisfaction
Guaranteed

Try **MND1 (G-4): sc-377319**, our highly recommended monoclonal alternative to MND1 (C-14).