SANTA CRUZ BIOTECHNOLOGY, INC.

MEI1 (F-4): sc-515359

BACKGROUND

The predominant cause of spermatogenic arrest of meiosis is the failure of homologous chromosomes to accurately synapse. MEI1 (Meiosis inhibitor protein 1), also designated Meiosis defective protein 1, is a 1,274 amino acid protein that is likely required for the formation of genetically programmed double-strand breaks, the first step in the initiation of meiosis. With predominant expression in testis, it is likely that defects of the gene encoding MEI1 results in male infertility. Interestingly, studies show that genetic variation in the MEI gene possibly predisposes European Americans but not Israeli men to infertility by meiotic arrest. Human MEI1 shares 79% sequence similarity with its mouse homolog. There are seven isoforms of MEI1 that are produced as a result of alternative splicing events.

REFERENCES

1. Libby, B.J., et al. 2002. The mouse meiotic mutation MEI1 disrupts chromosome synapsis with sexually dimorphic consequences for meiotic progression. Dev. Biol. 242: 174-187.
2. Grelon, M., et al. 2003. The *Arabidopsis* MEI1 gene encodes a protein with five BRCT domains that is involved in meiosis-specific DNA repair events independent of SPO11-induced DSBs. Plant J. 35: 465-475.
3. Libby, B.J., et al. 2003. Positional cloning and characterization of MEI1, a vertebrate-specific gene required for normal meiotic chromosome synapsis in mice. Proc. Natl. Acad. Sci. USA 100: 15706-15711.
4. Reinholdt, L.G. and Schimenti, J.C. 2005. MEI1 is epistatic to Dmc1 during mouse meiosis. Chromosoma 114: 127-134.
5. Liebe, B., et al. 2006. Mutations that affect meiosis in male mice influence the dynamics of the mid-preleptotene and bouquet stages. Exp. Cell Res. 312: 3768-3781.

CHROMOSOMAL LOCATION

Genetic locus: MEI1 (human) mapping to 22q13.2; Mei1 (mouse) mapping to 15 E1.

SOURCE

MEI1 (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 518-534 within an internal region of MEI1 of human origin.

PRODUCT

Each vial contains 200 µg IgA kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515359 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

MEI1 (F-4) is recommended for detection of MEI1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 MEI1 siRNA (h): sc-75770, MEI1 siRNA (m): sc-149362, MEI1 shRNA Plasmid (h): sc-75770-SH, MEI1 shRNA Plasmid (m): sc-149362-SH, MEI1 shRNA (h) Lentiviral Particles: sc-75770-V and MEI1 shRNA (m) Lentiviral Particles: sc-149362-V.

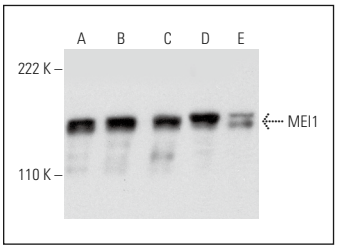
Molecular Weight of MEI1: 141 kDa.

Positive Controls: AML-193 whole cell lysate: sc-364182, ALL-SIL whole cell lysate: sc-364356 or KARPAS-299 whole cell lysate: sc-364781.

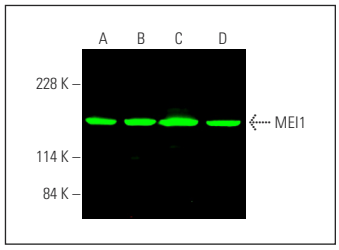
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MEI1 (F-4): sc-515359. Western blot analysis of MEI1 expression in NTERA-2 cl.D1 (**A**), KARPAS-299 (**B**), ES-2 (**C**), ALL-SIL (**D**) and AML-193 (**E**) whole cell lysates.



MEI1 (F-4): sc-515359. Near-infrared western blot analysis of MEI1 expression in NTERA-2 cl.D1 (**A**), Jurkat (**B**), K-562 (**C**) and ES-2 (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Horiuchi, K., et al. 2018. Impaired spermatogenesis, muscle, and erythrocyte function in U12 intron splicing-defective Zrsr1 mutant mice. Cell Rep. 23: 143-155.

RESEARCH USE

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