SANTA CRUZ BIOTECHNOLOGY, INC.

Eme1 (M-55): sc-292560

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The Power to Question

BACKGROUND

Essential meiotic endonuclease 1 (Eme1), a member of the Eme1/Mms4 family, associates with MUS81 to constitute a heterodimeric endonuclease that has been implicated in mitotic and meiotic recombination in eukaryotes. The MUS81-Eme1 complex cleaves branched DNA structures, especially those arising during stalled DNA replication such as replication forks and 3' DNA flaps. When purified from yeast, this complex cleaves synthetic holliday junctions into linear duplex DNA. These findings provide compelling evidence that MUS81-Eme1 complexes are essential elements of the eukaryotic nuclear holliday junction resolvase. Eme1 may also be required in mitosis for the processing of collapsed replication forks. Eme1 is typically localized to the nucleolus and is recruited to regions of DNA damage in S phase cells.

REFERENCES

1. England, M.C., et al. 1977. Noninduced apical closure in immature roots of dogs' teeth. J. Endod. 3: 411-417.
2. Rott, H.D., et al. 1978. Kartagener's syndrome in sibs: clinical and immunologic investigations. Hum. Genet. 43: 1-11.
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4. Ogrunc, M., et al. 2003. Identification and characterization of human MUS81-MMS4 structure-specific endonuclease. J. Biol. Chem. 278: 21715-21720.
5. Ciccia, A., et al. 2003. Identification and characterization of the human MUS81-Eme1 endonuclease. J. Biol. Chem. 278: 25172-25178.
6. Beausoleil, S.A., et al. 2004. Large-scale characterization of HeLa cell nuclear phosphoproteins. Proc. Natl. Acad. Sci. USA 101: 12130-12135.
7. Blais, V., et al. 2004. RNA interference inhibition of MUS81 reduces mitotic recombination in human cells. Mol. Biol. Cell 15: 552-562.
8. Hiyama, T., et al. 2006. Haploinsufficiency of the MUS81-Eme1 endonuclease activates the intra-S-phase and G_2/M checkpoints and promotes rereplication in human cells. Nucleic Acids Res. 34: 880-892.

CHROMOSOMAL LOCATION

Genetic locus: Eme1 (mouse) mapping to 11 D.

SOURCE

Eme1 (M-55) is a rabbit polyclonal antibody raised against amino acids 37-91 mapping near the N-terminus of Eme1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Eme1 (M-55) is recommended for detection of Eme1 of mouse and rat 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); non cross-reactive with Eme2.

Suitable for use as control antibody for Eme1 siRNA (m): sc-144638, Eme1 shRNA Plasmid (m): sc-144638-SH and Eme1 shRNA (m) Lentiviral Particles: sc-144638-V.

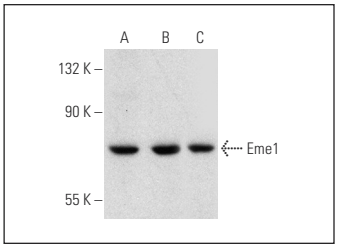
Molecular Weight of Eme1: 65 kDa.

Positive Controls: EOC 20 whole cell lysate: sc-364187, NIH/3T3 nuclear extract: sc-2138 or RAW 264.7 nuclear extract: sc-24961.

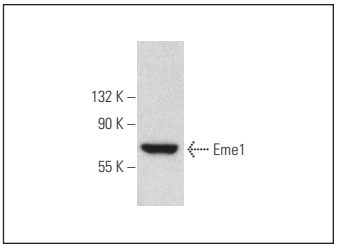
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Eme1 (M-55): sc-292560. Western blot analysis of Eme1 expression in NIH/3T3 (**A**), RAW 264.7 (**B**) and MM-142 (**C**) nuclear extracts.



Eme1 (M-55): sc-292560. Western blot analysis of Eme1 expression in EOC 20 whole cell lysate.

RESEARCH USE

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