

Eme1 (E-6): sc-390971

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. and Best E. 1977. Noninduced apical closure in immature roots of dogs' teeth. *J. Endod.* 3: 411-417.
2. Rott, H.D., Warnatz, H., Pasch-Hilgers, R. and Weikl, A. 1978. Kartagener's syndrome in sibs: clinical and immunologic investigations. *Hum. Genet.* 43: 1-11.
3. 1992. Tonsils: A clinically oriented update. 2nd international symposium on tonsils. Pavia, September 11-13, 1991. *Adv. Otorhinolaryngol.* 47: 1-349.
4. Ogrunc, M. and Sancar, A. 2003. Identification and characterization of human MUS81-MMS4 structure-specific endonuclease. *J. Biol. Chem.* 278: 21715-21720.
5. Ciccia, A., Constantinou, A. and West, S.C. 2003. Identification and characterization of the human MUS81-Eme1 endonuclease. *J. Biol. Chem.* 278: 25172-25178.
6. Smith, G.R., Boddy, M.N., Shanahan, P. and Russell, P. 2003. Fission yeast MUS81-Eme1 Holliday junction resolvase is required for meiotic crossing over but not for gene conversion. *Genetics* 165: 2289-2293.
7. Beausoleil, S.A., Jedrychowski, M., Schwartz, D., Elias, J.E., Villen, J., Li, J., Cohn, M.A., Cantley, L.C. and Gygi, S.P. 2004. Large-scale characterization of HeLa cell nuclear phosphoproteins. *Proc. Natl. Acad. Sci. USA* 101: 12130-12135.
8. Blais, V., Gao, H., Elwell, C.A., Boddy, M.N., Gaillard, P.H., Russell, P. and McGowan, C.H. 2004. RNA interference inhibition of MUS81 reduces mitotic recombination in human cells. *Mol. Biol. Cell* 15: 552-562.

CHROMOSOMAL LOCATION

Genetic locus: EME1 (human) mapping to 17q21.33.

SOURCE

Eme1 (E-6) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Eme1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Eme1 (E-6) is recommended for detection of Eme1 of 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 Eme1 siRNA (h): sc-72080, Eme1 shRNA Plasmid (h): sc-72080-SH and Eme1 shRNA (h) Lentiviral Particles: sc-72080-V.

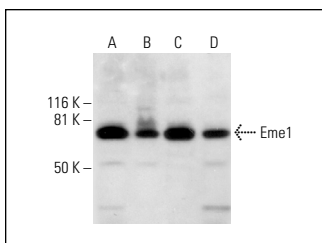
Molecular Weight of Eme1: 65 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

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 A/G PLUS-Agarose: sc-2003 (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



Eme1 (E-6): sc-390971. Western blot analysis of Eme1 expression in HeLa (A), K-562 (B), Jurkat (C) and SW480 (D) nuclear extracts.

STORAGE

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

RESEARCH USE

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



See **Eme1 (MTA31 7h2/1): sc-53275** for Eme1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.