

Eme1 (h): 293T Lysate: sc-113576

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. Ciccio, 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.
9. Hiyama, T., Katsura, M., Yoshihara, T., Ishida, M., Kinomura, A., Tonda, T., Asahara, T. and Miyagawa, K. 2006. Haploinsufficiency of the MUS81-Eme1 endonuclease activates the intra-S-phase and G₂/M checkpoints and promotes rereplication in human cells. *Nucleic Acids Res.* 34: 880-892.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

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

PRODUCT

Eme1 (h): 293T Lysate represents a lysate of human Eme1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Eme1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Eme1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

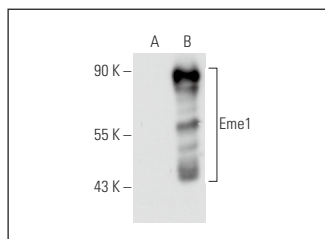
Eme1 (MTA31 7h2/1): sc-53275 is recommended as a positive control antibody for Western Blot analysis of enhanced human Eme1 expression in Eme1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



Eme1 (MTA31 7h2/1): sc-53275. Western blot analysis of Eme1 expression in non-transfected: sc-117752 (A) and human Eme1 transfected: sc-113576 (B) 293T whole cell lysates.

RESEARCH USE

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