

## Eme1 siRNA (h): sc-72080

### 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

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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. Ciccio, A., et al. 2003. Identification and characterization of the human MUS81-Eme1 endonuclease. *J. Biol. Chem.* 278: 25172-25178.
6. Smith, G.R., et al. 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., et al. 2004. Large-scale characterization of HeLa cell nuclear phosphoproteins. *Proc. Natl. Acad. Sci. USA* 101: 12130-12135.
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### CHROMOSOMAL LOCATION

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

### PRODUCT

Eme1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Eme1 shRNA Plasmid (h): sc-72080-SH and Eme1 shRNA (h) Lentiviral Particles: sc-72080-V as alternate gene silencing products.

For independent verification of Eme1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72080A, sc-72080B and sc-72080C.

### STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

Eme1 siRNA (h) is recommended for the inhibition of Eme1 expression in human cells.

### SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

### GENE EXPRESSION MONITORING

Eme1 (MTA31 7h2/1): sc-53275 is recommended as a control antibody for monitoring of Eme1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Eme1 gene expression knockdown using RT-PCR Primer: Eme1 (h)-PR: sc-72080-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

### RESEARCH USE

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