

## Eme2 siRNA (h): sc-93006

### BACKGROUND

Eme2, also known as Probable crossover junction endonuclease Eme2, is a 379 amino acids nuclear protein. As a member of the Eme2/Mms4 family, Eme2 associates with MUS81 to constitute a DNA structure-specific endonuclease. The MUS81-Eme2 complex cleaves branched DNA structures, especially those arising during stalled DNA replication such as replication forks and 3' DNA flaps. Expressed as 2 alternatively spliced isoforms, Eme2 is encoded by a gene located on human chromosome 16p13.3, which encodes over 900 genes and comprises nearly 3% of the human genome. Defects in the gene encoding WDR59 may be associated with the rare disorder Rubinstein-Taybi syndrome or Crohn's disease, which is a gastrointestinal inflammatory condition.

### REFERENCES

- Baraitser, M. and Preece, M.A. 1983. The Rubinstein-Taybi syndrome: occurrence in two sets of identical twins. *Clin. Genet.* 23: 318-320.
- Neer, E.J., Schmidt, C.J., Nambudripad, R. and Smith, T.F. 1994. The ancient regulatory-protein family of WD-repeat proteins. *Nature* 371: 297-300.
- Nagase, T., Kikuno, R. and Ohara, O. 2001. Prediction of the coding sequences of unidentified human genes. XXI. The complete sequences of 60 new cDNA clones from brain which code for large proteins. *DNA Res.* 8: 179-187.
- Abraham, J., Lemmers, B., Hande, M.P., Moynahan, M.E., Chahwan, C., Ciccio, A., Essers, J., Hanada, K., Chahwan, R., Khaw, A.K., McPherson, P., Shehabeldin, A., Laister, R., Arrowsmith, C., Kanaar, R., et al. 2003. Eme1 is involved in DNA damage processing and maintenance of genomic stability in mammalian cells. *EMBO J.* 22: 6137-6147.
- Gerhard, D.S., Wagner, L., Feingold, E.A., Shenmen, C.M., Grouse, L.H., Schuler, G., Klein, S.L., Old, S., Rasooly, R., Good, P., Guyer, M., Peck, A.M., Derge, J.G., Lipman, D., Collins, F.S., Jang, W., Sherry, S., et al. 2004. The status, quality, and expansion of the NIH full-length cDNA project: the Mammalian Gene Collection (MGC). *Genome Res.* 14: 2121-2127.
- Carninci, P., Kasukawa, T., Katayama, S., Gough, J., Frith, M.C., Maeda, N., Oyama, R., Ravasi, T., Lenhard, B., Wells, C., Kodzius, R., Shimokawa, K., Bajic, V.B., Brenner, S.E., Batalov, S., Forrest, A.R., et al. 2005. The transcriptional landscape of the mammalian genome. *Science* 309: 1559-1563.
- Church, D.M., Goodstadt, L., Hillier, L.W., Zody, M.C., Goldstein, S., She, X., Bult, C.J., Agarwala, R., Cherry, J.L., DiCuccio, M., Hlavina, W., Kapustin, Y., Meric, P., Maglott, D., Birtle, Z., Marques, A.C., Graves, T., et al. 2009. Lineage-specific biology revealed by a finished genome assembly of the mouse. *PLoS Biol.* 7: e1000112.

### CHROMOSOMAL LOCATION

Genetic locus: EME2 (human) mapping to 16p13.3.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

### PRODUCT

Eme2 siRNA (h) is a target-specific 19-25 nt siRNA 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 Eme2 shRNA Plasmid (h): sc-93006-SH and Eme2 shRNA (h) Lentiviral Particles: sc-93006-V as alternate gene silencing products.

### 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

Eme2 siRNA (h) is recommended for the inhibition of Eme2 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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Eme2 gene expression knockdown using RT-PCR Primer: Eme2 (h)-PR: sc-93006-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.