SANTA CRUZ BIOTECHNOLOGY, INC.

Eme1 (MTA31 7h2/1): sc-53275

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

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

SOURCE

Eme1 (MTA31 7h2/1) is a mouse monoclonal antibody raised against His-tagged recombinant Eme1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Eme1 (MTA31 7h2/1) is available conjugated to agarose (sc-53275 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53275 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53275 PE), fluorescein (sc-53275 FITC), Alexa Fluor® 488 (sc-53275 AF488), Alexa Fluor® 546 (sc-53275 AF546), Alexa Fluor® 594 (sc-53275 AF594) or Alexa Fluor® 647 (sc-53275 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53275 AF680) or Alexa Fluor® 790 (sc-53275 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Eme1 (MTA31 7h2/1) is recommended for detection of Eme1 of human 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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: HeLa nuclear extract: sc-2120, Jurkat nuclear extract: sc-2132 or K-562 nuclear extract: sc-2130.

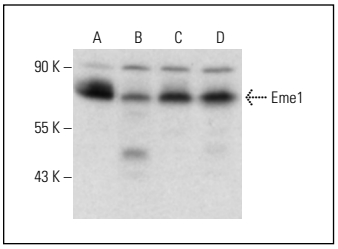
RESEARCH USE

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

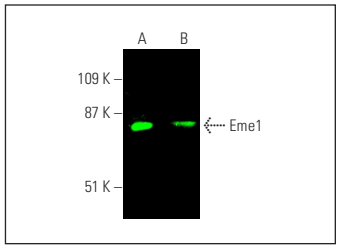
STORAGE

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

DATA



Eme1 (MTA31 7h2/1): sc-53275. Western blot analysis of Eme1 expression in HeLa (**A**), Jurkat (**B**), K-652 (**C**) and SW480 (**D**) nuclear extracts.



Eme1 (MTA31 7h2/1): sc-53275. Near-infrared western blot analysis of Eme1 expression in HeLa (**A**) and Jurkat (**B**) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Tomoda, Y., et al. 2009. Functional evidence for Eme1 as a marker of cisplatin resistance. Int. J. Cancer 124: 2997-3001.
2. Rass, U., et al. 2010. Mechanism of Holliday junction resolution by the human GEN1 protein. Genes Dev. 24: 1559-1569.
3. Matos, J., et al. 2011. Regulatory control of the resolution of DNA recombination intermediates during meiosis and mitosis. Cell 147: 158-172.
4. Ying, S., et al. 2013. MUS81 promotes common fragile site expression. Nat. Cell Biol. 15: 1001-1007.
5. Dewalt, R.I., et al. 2014. Gastroesophageal junction adenocarcinoma displays abnormalities in homologous recombination and nucleotide excision repair. Lung Cancer 5: 11-20.
6. Wyatt, H.D., et al. 2017. The SMX DNA repair Tri-nuclease. Mol. Cell 65: 848-860.e11.
7. Kurashima, K., et al. 2018. Polη, a Y-family translesion synthesis polymerase, promotes cellular tolerance of Myc-induced replication stress. J. Cell Sci. 131: jcs212183.
8. Porebski, B., et al. 2019. WRNIP1 protects reversed DNA replication forks from SLX4-dependent nucleolytic cleavage. iScience 21: 31-41.
9. Chappidi, N., et al. 2020. Fork cleavage-religation cycle and active transcription mediate replication restart after fork stalling at co-transcriptional R-loops. Mol. Cell 77: 528-541.e8.
10. Wu, M.M., et al. 2020. Repurposing of niclosamide as a STAT3 inhibitor to enhance the anticancer effect of chemotherapeutic drugs in treating colorectal cancer. Life Sci. 262: 118522.

PROTOCOLS

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