

MIER1 (Y-15): sc-131602

BACKGROUND

The mesoderm induction early response (MIER) protein family (also known as the fibroblast growth factor (FGF)-regulated immediate-early protein family) comprises a group of proteins that are activated by FGF (fibroblast growth factor). This suggests that MEIR proteins may play a significant role in FGF-regulated cellular activities and in the progression of certain cancers. MIER proteins contain one SANT domain, which is involved in transcriptional activation and repression, and one ELM2 domain, which was first characterized in EGL-27, a gene that is critically involved in embryonic patterning of *C. elegans*. MIER1, formerly known as early response 1 (ER1), was first cloned and characterized in *Xenopus*. Expression of MIER1 is negligible in most normal tissues, but has been found to be upregulated in breast carcinoma cell lines and tumors. MIER1 functions as a transcriptional repressor of a number of genes including Sp1 target genes, most likely through interaction with HDAC1.

REFERENCES

1. Paterno, G.D., et al. 1997. cDNA cloning of a novel, developmentally regulated immediate early gene activated by fibroblast growth factor and encoding a nuclear protein. *J. Biol. Chem.* 272: 25591-25595.
2. Paterno, G.D., et al. 1998. Molecular cloning of human ER1 cDNA and its differential expression in breast tumours and tumour-derived cell lines. *Gene* 222: 77-82.
3. Paterno, G.D., et al. 2002. Genomic organization of the human MIER1 gene and characterization of alternatively spliced isoforms: regulated use of a facultative intron determines subcellular localization. *Gene* 295: 79-88.
4. Ding, Z., et al. 2003. Human MIER1 α and β function as transcriptional repressors by recruitment of histone deacetylase 1 to their conserved ELM2 domain. *Mol. Cell. Biol.* 23: 250-258.
5. Ding, Z., et al. 2004. The SANT domain of human MIER1 interacts with Sp1 to interfere with GC box recognition and repress transcription from its own promoter. *J. Biol. Chem.* 279: 28009-28016.
6. Thorne, L.B., et al. 2005. Cloning and characterization of the mouse ortholog of MIER1. *DNA Seq.* 16: 237-240.
7. Post, J.N., et al. 2005. Developmentally regulated cytoplasmic retention of the transcription factor XMIER1 requires sequence in the acidic activation domain. *Int. J. Biochem. Cell Biol.* 37: 463-477.

CHROMOSOMAL LOCATION

Genetic locus: MIER1 (human) mapping to 1p31.3; Mier1 (mouse) mapping to 4 C6.

SOURCE

MIER1 (Y-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MIER1 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131602 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MIER1 (Y-15) is recommended for detection of MIER1 isoforms 1-10 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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); non cross-reactive with family members MIER2 or MIER3.

Suitable for use as control antibody for MIER1 siRNA (h): sc-88782, MIER1 siRNA (m): sc-149429, MIER1 shRNA Plasmid (h): sc-88782-SH, MIER1 shRNA Plasmid (m): sc-149429-SH, MIER1 shRNA (h) Lentiviral Particles: sc-88782-V and MIER1 shRNA (m) Lentiviral Particles: sc-149429-V.

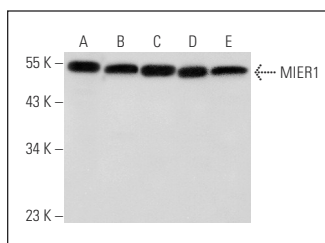
Molecular Weight of MIER1: 79 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MIER1 (Y-15): sc-131602. Western blot analysis of MIER1 expression in Hep G2 (A), OVCAR-3 (B), MCF7 (C), HeLa (D) and NIH/3T3 (E) whole cell lysates.

RESEARCH USE

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