

# MDFIC (E-15): sc-163064



The Power to Question

## BACKGROUND

MDFIC (MyoD family inhibitor domain-containing protein), also known as HIC, is a 355 amino acid protein that exists as 2 alternatively spliced isoforms, known as p40 and p32, which localize predominately to the nucleolus and cytoplasm, respectively. Expressed in prostate, thymus, spleen and small intestine, MDFIC functions to modulate the expression of viral genomes, specifically down-regulating the transcription of HIV-1 and up-regulating the expression of HTLV-1 (T-cell leukemia virus type I). Additionally, MDFIC is able to adjust the amount of  $\beta$ -catenin within the cell and may also function to regulate the Wnt and JNK signaling pathways. The gene encoding MDFIC maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

## REFERENCES

1. Thébault, S., et al. 2000. Sequence requirement for the nucleolar localization of human I-mfa domain-containing protein (HIC p40). *Eur. J. Cell Biol.* 79: 834-838.
2. Thebault, S., et al. 2000. Molecular cloning of a novel human I-mfa domain-containing protein that differently regulates human T-cell leukemia virus type I and HIV-1 expression. *J. Biol. Chem.* 275: 4848-4857.
3. Kusano, S., et al. 2002. I-mfa domain proteins interact with Axin and affect its regulation of the Wnt and c-Jun N-terminal kinase signaling pathways. *Mol. Cell. Biol.* 22: 6393-6405.
4. Young, T.M., et al. 2003. The human I-mfa domain-containing protein, HIC, interacts with cyclin T1 and modulates P-TEFb-dependent transcription. *Mol. Cell. Biol.* 23: 6373-6384.
5. Gautier, V.W., et al. 2005. Direct interaction of the human I-mfa domain-containing protein, HIC, with HIV-1 Tat results in cytoplasmic sequestration and control of Tat activity. *Proc. Natl. Acad. Sci. USA* 102: 16362-16367.
6. Wang, Q., et al. 2007. Developmental regulators containing the I-mfa domain interact with T cyclins and Tat and modulate transcription. *J. Mol. Biol.* 367: 630-646.

## CHROMOSOMAL LOCATION

Genetic locus: *Mdfic* (mouse) mapping to 6 A1.

## SOURCE

MDFIC (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MDFIC of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-163064 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MDFIC (E-15) is recommended for detection of MDFIC of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

MDFIC (E-15) is also recommended for detection of MDFIC in additional species, including equine.

Suitable for use as control antibody for MDFIC siRNA (m): sc-149335, MDFIC shRNA Plasmid (m): sc-149335-SH and MDFIC shRNA (m) Lentiviral Particles: sc-149335-V.

Molecular Weight of MDFIC p32 isoform: 32 kDa.

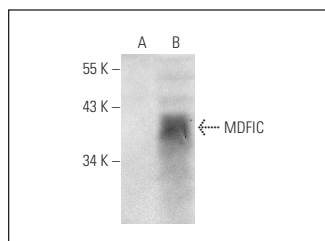
Molecular Weight of MDFIC p40 isoform: 40 kDa.

Positive Controls: MDFIC (m): 293T Lysate: sc-178926.

## 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



MDFIC (E-15): sc-163064. Western blot analysis of MDFIC expression in non-transfected: sc-117752 (A) and mouse MDFIC transfected: sc-178926 (B) 293T whole cell lysates.

## STORAGE

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

## RESEARCH USE

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