SANTA CRUZ BIOTECHNOLOGY, INC.

MEF-2D (H-11): sc-271153

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The myocyte enhancer factor-2 (MEF-2) family of transcription factors associate with co-repressors or co-activators to regulate development and function of T cells, neuronal cells and muscle cells. Four family members arise from alternatively spliced transcripts, termed MEF-2A, -2B, -2C and -2D. These members bind as homo- and heterodimers to the MEF-2 site in the promoter region of affected genes. Differential regulation in the expression of the four transcripts implies functional distinction for each duing embryogenesis and development. The process of differentiation from mesodermal precursor cells to myoblasts has led to the discovery of a variety of tissue-specific factors that regulate muscle gene expression. The myogenic basic helix-loop-helix proteins, including MyoD, myogenin, Myf-5 and MRF4, are one class of identified factors. A second family of DNA-binding regulatory proteins is the myocyte-specific enhancer factor-2 (MEF-2) family. Each of these proteins binds to the MEF-2 target DNA sequence present in the regulatory regions of many muscle-specific genes.

CHROMOSOMAL LOCATION

Genetic locus: MEF2D (human) mapping to 1q22; Mef2d (mouse) mapping to 3 F1.

SOURCE

MEF-2D (H-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 441-468 within an internal region of MEF-2D of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271153 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-271153 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

MEF-2D (H-11) is recommended for detection of MEF-2D of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MEF-2D siRNA (h): sc-38064, MEF-2D siRNA (m): sc-38065, MEF-2D shRNA Plasmid (h): sc-38064-SH, MEF-2D shRNA Plasmid (m): sc-38065-SH, MEF-2D shRNA (h) Lentiviral Particles: sc-38064-V and MEF-2D shRNA (m) Lentiviral Particles: sc-38065-V.

MEF-2D (H-11) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

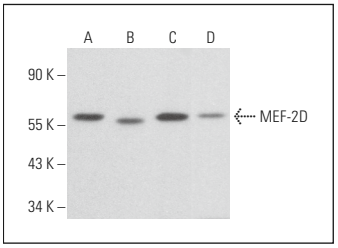
Molecular Weight of MEF-2D: 56 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

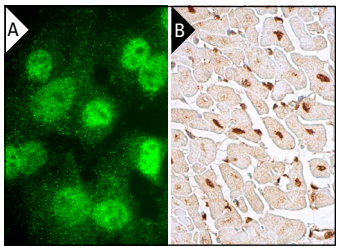
STORAGE

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

DATA



MEF-2D (H-11): sc-271153. Western blot analysis of MEF-2D expression in HeLa (**A**), NIH/3T3 (**B**), K-562 (**C**) and HEK293 (**D**) whole cell lysates.



MEF-2D (H-11): sc-271153. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing nuclear staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Murata, T., et al. 2013. Contribution of myocyte enhancer factor 2 family transcription factors to BZLF1 expression in Epstein-Barr virus reactivation from latency. J. Virol. 87: 10148-10162.
2. Zhang, L., et al. 2014. Disruption of chaperone-mediated autophagy-dependent degradation of MEF2A by oxidative stress-induced lysosome destabilization. Autophagy 10: 1015-1035.
3. Kong, J., et al. 2016. Pokemon promotes the invasiveness of hepatocellular carcinoma by enhancing MEF2D transcription. Hepatol. Int. 10: 493-500.
4. Liu, W., et al. 2017. Metabolic stress-induced cardiomyopathy is caused by mitochondrial dysfunction due to attenuated Erk5 signaling. Nat. Commun. 8: 494.
5. Dodge-Kafka, K.L., et al. 2018. Bidirectional regulation of HDAC5 by mAKAPβ signalosomes in cardiac myocytes. J. Mol. Cell. Cardiol. 118: 13-25.
6. Yonamine, C.Y., et al. 2019. Diabetes induces tri-methylation at lysine 9 of histone 3at Slc2a4 gene in skeletal muscle: a new target to improve glycemic control. Mol. Cell. Endocrinol. 481: 26-34.
7. Li, J., et al. 2019. Muscle A-kinase-anchoring protein-β-bound calcineurin toggles active and repressive transcriptional complexes of myocyte enhancer factor 2D. J. Biol. Chem. 294: 2543-2554.
8. Wang, C., et al. 2019. Methyltransferase-like 21c methylates and stabilizes the heat shock protein Hspa8 in type I myofibers in mice. J. Biol. Chem. 294: 13718-13728.
9. Seidita, I., et al. 2023. Sphingosine 1-phosphate elicits a ROS-mediated proinflammatory response in human endometrial stromal cells via ERK5 activation. FASEB J. 37: e23061.

RESEARCH USE

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