Revision 1

Store at -20C

#56830

# MEF2D Antibody

Cell Signaling TECHNOLOGY®

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| W, IP | H | Endogenous | 70 | Rabbit | #Q14814 | 4209 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunoprecipitation | 1:50 |

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

MEF2D Antibody recognizes endogenous levels of total MEF2D protein.

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu168 of human MEF2D protein. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

Myocyte enhancer factor 2D (MEF2D) is a member of the MEF2 family of transcription factors. In mammals, there are four MEF2C-related genes (*MEF2A*, *MEF2B*, *MEF2C*, and *MEF2D*) that encode proteins that exhibit significant amino acid sequence similarity within their DNA-binding domains and, to a lesser extent, throughout the rest of the proteins (1). MEF2 proteins contain a highly conserved N-terminal MADS-box domain, an MEF2 domain, and a more highly variable C-terminal transactivation domain (2). The MEF2 family members were originally described as muscle-specific DNA-binding proteins that recognize MEF2 motifs found within the promoters of many muscle-specific genes (3,4); however, more recently they have been found to play critical roles in other physiological processes, such as heart formation and nervous system development (5,6). As such, alterations in MEF2 protein levels can result in developmental and neurological disorders, as well as other diseases such as liver fibrosis and many types of cancer (7). Specifically, MEF2D expression in hepatocellular carcinoma (HCC) is associated with higher levels of proliferation and poor prognosis (8). MEF2D is also overexpressed in clinical colorectal cancer tissues, where its high expression correlates with metastatic process. Functional investigations show that MEF2D promotes cancer cell invasion and epithelial-mesenchymal transition (EMT) and that it is essential for certain microenvironment signals to induce EMT and metastasis *in vivo* (9). Alternatively, MEF2D may function as a tumor suppressor in lipo- and leiomyosarcoma, as decreased MEF2D activity results in increased cell proliferation and anchorage-independent growth (10). MEF2D may also act as a tumor suppressor in rhabdomyosarcoma, as loss of MEF2D expression results in inhibition of differentiation, increased cell proliferation, and increased anchorage-independent growth (11).

## Background References

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2. Chen, X. et al. (2017) *Oncotarget* 8, 112152-65.
3. Brand, N.J. (1997) *Int J Biochem Cell Biol* 29, 1467-70.
4. Black, B.L. and Olson, E.N. (1998) *Annu Rev Cell Dev Biol* 14, 167-96.
5. Shalizi, A.K. and Bonni, A. (2005) *Curr Top Dev Biol* 69, 239-66.
6. Phan, D. et al. (2005) *Development* 132, 2669-78.
7. Pon, J.R. and Marra, M.A. (2016) *Oncotarget* 7, 2297-312.
8. Ma, L. et al. (2014) *Cancer Res* 74, 1452-62.
9. Su, L. et al. (2016) *Cancer Res* 76, 5054-67.
10. Di Giorgio, E. et al. (2013) *Mol Cell Biol* 33, 4473-91.
11. Zhang, M. et al. (2013) *Mol Cancer* 12, 150.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting **IP:** Immunoprecipitation

## Cross-Reactivity Key

**H:** Human

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