



MIF4GD (E-13): sc-132347

BACKGROUND

MIF4GD (MIF4G domain containing), also known as MIFD, AD023 or SLIP1, is a 222 amino acid protein that contains one MIF4G domain. Localized to both the nucleus and the cytoplasm, MIF4GD plays a role in the replication-dependent translation of histone mRNAs, which differ from most eukaryotic mRNAs in that they end with a stem-loop instead of a poly-A tail. Specifically, MIF4GD interacts with SLBP, eIF4G and DAP-5. Via its interaction with SLBP, MIF4GD is thought to be tethered to the stem loops of histone mRNAs where it may facilitate the circularizing of the mRNAs, thereby enhancing their translation. Depletion of MIF4GD results in reduced histone translation and may lead to cell death, suggesting that MIF4GD plays an important role in cell survival. Two isoforms of MIF4GD exist due to alternative splicing events.

REFERENCES

1. Craig, A.W., Haghighat, A., Yu, A.T. and Sonenberg, N. 1998. Interaction of polyadenylate-binding protein with the eIF4G homologue PAIP enhances translation. *Nature* 392: 520-523.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 612072: World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Lehner, B. and Sanderson, C.M. 2004. A protein interaction framework for human mRNA degradation. *Genome Res.* 14: 1315-1323.
4. Rual, J.F., Venkatesan, K., Hao, T., Hirozane-Kishikawa, T., Dricot, A., Li, N., Berriz, G.F., Gibbons, F.D., Dreze, M., Ayivi-Guedehoussou, N., Klitgord, N., Simon, C., Boxem, M., Milstein, S., Rosenberg, J., Goldberg, D.S., et al. 2005. Towards a proteome-scale map of the human protein-protein interaction network. *Nature* 437: 1173-1178.
5. Lim, J., Hao, T., Shaw, C., Patel, A.J., Szabó, G., Rual, J.F., Fisk, C.J., Li, N., Smolyar, A., Hill, D.E., Barabási, A.L., Vidal, M. and Zoghbi, H.Y. 2006. A protein-protein interaction network for human inherited ataxias and disorders of Purkinje cell degeneration. *Cell* 125: 801-814.
6. Hinton, T.M., Coldwell, M.J., Carpenter, G.A., Morley, S.J. and Pain, V.M. 2007. Functional analysis of individual binding activities of the scaffold protein eIF4G. *J. Biol. Chem.* 282: 1695-1708.
7. Cakmakci, N.G., Lerner, R.S., Wagner, E.J., Zheng, L. and Marzluff, W.F. 2008. SLIP1, a factor required for activation of histone mRNA translation by the stem-loop binding protein. *Mol. Cell. Biol.* 28: 1182-1194.

CHROMOSOMAL LOCATION

Genetic locus: MIF4GD (human) mapping to 17q25.1; Mif4gd (mouse) mapping to 11 E2.

STORAGE

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

PROTOCOLS

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

SOURCE

MIF4GD (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MIF4GD of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-132347 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MIF4GD (E-13) is recommended for detection of MIF4GD isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for MIF4GD siRNA (h): sc-94142, MIF4GD siRNA (m): sc-149432, MIF4GD shRNA Plasmid (h): sc-94142-SH, MIF4GD shRNA Plasmid (m): sc-149432-SH, MIF4GD shRNA (h) Lentiviral Particles: sc-94142-V and MIF4GD shRNA (m) Lentiviral Particles: sc-149432-V.

Molecular Weight of MIF4GD: 25 kDa.

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) 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.

RESEARCH USE

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