

MTO1 (H-5): sc-398386

BACKGROUND

MTO1 (mitochondrial translation optimization 1), also known as CGI-02, is a 717 amino acid mitochondrial protein that belongs to the mnmG family. Expressed ubiquitously with highest expression in tissues which have an elevated metabolic rate, MTO1 is involved in mitochondrial tRNA modification, specifically in the 5-carboxymethylaminomethyl modification of wobble uridine bases. Additionally, MTO1 is thought to participate in the expression of the aminoglycoside-induced and non-syndromic deafness phenotypes associated with mutations in the 12S rRNA gene, suggesting a possible role for MTO1 in the pathogenesis of these deafness-associated conditions. MTO1 exists as multiple isoforms that are produced by alternative splicing events.

REFERENCES

- Colby, G., et al. 1998. MTO1 codes for a mitochondrial protein required for respiration in paromomycin-resistant mutants of *Saccharomyces cerevisiae*. *J. Biol. Chem.* 273: 27945-27952.
- Li, X., et al. 2002. Isolation and characterization of the putative nuclear modifier gene MTO1 involved in the pathogenesis of deafness-associated mitochondrial 12S rRNA A1555G mutation. *J. Biol. Chem.* 277: 27256-27264.
- Li, X. and Guan, M.X. 2002. A human mitochondrial GTP binding protein related to tRNA modification may modulate phenotypic expression of the deafness-associated mitochondrial 12S rRNA mutation. *Mol. Cell. Biol.* 22: 7701-7711.

CHROMOSOMAL LOCATION

Genetic locus: MTO1 (human) mapping to 6q13; Mto1 (mouse) mapping to 9 E1.

SOURCE

MTO1 (H-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 267-282 within an internal region of MTO1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MTO1 (H-5) is available conjugated to agarose (sc-398386 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398386 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398386 PE), fluorescein (sc-398386 FITC), Alexa Fluor® 488 (sc-398386 AF488), Alexa Fluor® 546 (sc-398386 AF546), Alexa Fluor® 594 (sc-398386 AF594) or Alexa Fluor® 647 (sc-398386 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398386 AF680) or Alexa Fluor® 790 (sc-398386 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398386 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

MTO1 (H-5) is recommended for detection of MTO1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MTO1 (H-5) is also recommended for detection of MTO1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for MTO1 siRNA (h): sc-95318, MTO1 siRNA (m): sc-149689, MTO1 shRNA Plasmid (h): sc-95318-SH, MTO1 shRNA Plasmid (m): sc-149689-SH, MTO1 shRNA (h) Lentiviral Particles: sc-95318-V and MTO1 shRNA (m) Lentiviral Particles: sc-149689-V.

Molecular Weight (predicted) of MTO1: 80 kDa.

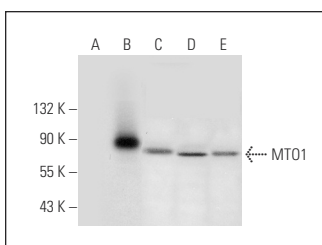
Molecular Weight (observed) of MTO1: 90 kDa.

Positive Controls: MTO1 (h): 293T Lysate: sc-111063, RT-4 whole cell lysate: sc-364257 or MIA PaCa-2 cell lysate: sc-2285.

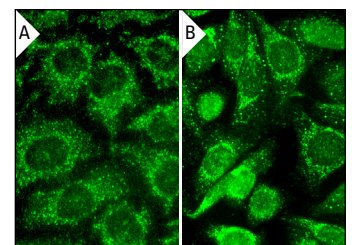
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MTO1 (H-5): sc-398386. Western blot analysis of MTO1 expression in non-transfected 293T: sc-117752 (A), human MTO1 transfected 293T: sc-111063 (B), MIA PaCa-2 (C), PC-3 (D) and RT-4 (E) whole cell lysates.



MTO1 (H-5): sc-398386. Immunofluorescence staining of methanol-fixed HeLa (A) and SW480 (B) cells showing mitochondrial localization.

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.