

# TIMMDC1 (G-10): sc-514927

## BACKGROUND

TIMMDC1 (translocase of inner mitochondrial membrane domain-containing protein 1), also known as Protein M5-14 or C3orf1 (chromosome 3 open reading frame 1), is a 285 amino acid multi-pass mitochondrion membrane protein that has enhanced expression in heart and skeletal muscle. It has been shown that TIMMDC1 expression is high in lung carcinoma cells, with depletion of TIMMDC1 resulting in inhibition of cell migration and proliferation. It is suggested the TIMMDC1 plays a role as a chaperone protein in construction the membrane arm of mitochondrial respiratory complex I. The mitochondrial respiratory complex I couples electron transfer to the release of protons into the mitochondrial inner membrane space to promote ATP production through ATP synthase, as part of the electron transport chain. The TIMMDC1 gene is conserved in chimpanzee, Rhesus monkey, canine, bovine, mouse, rat, chicken, zebrafish, and *Drosophila*.

## REFERENCES

1. Escarceller, M., et al. 2000. Identification and expression analysis of C3orf1, a novel human gene homologous to the *Drosophila* RP140-upstream gene. DNA Seq. 11: 335-338.
2. Wang, G., et al. 2010. Genome-wide conditional search for epistatic disease-predisposing variants in human association studies. Hum. Hered. 70: 34-41.
3. Andrews, B., et al. 2013. Assembly factors for the membrane arm of human complex I. Proc. Natl. Acad. Sci. USA 110: 18934-18939.
4. Wu, H., et al. 2014. Depletion of C3orf1/TIMMDC1 inhibits migration and proliferation in 95D lung carcinoma cells. Int. J. Mol. Sci. 15: 20555-20571.

## CHROMOSOMAL LOCATION

Genetic locus: TIMMDC1 (human) mapping to 3q13.33; Timmdc1 (mouse) mapping to 16 B4.

## SOURCE

TIMMDC1 (G-10) is a mouse monoclonal antibody raised against amino acids 7-285 mapping at the C-terminus of TIMMDC1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TIMMDC1 (G-10) is available conjugated to agarose (sc-514927 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514927 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514927 PE), fluorescein (sc-514927 FITC), Alexa Fluor® 488 (sc-514927 AF488), Alexa Fluor® 546 (sc-514927 AF546), Alexa Fluor® 594 (sc-514927 AF594) or Alexa Fluor® 647 (sc-514927 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514927 AF680) or Alexa Fluor® 790 (sc-514927 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## STORAGE

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

## APPLICATIONS

TIMMDC1 (G-10) is recommended for detection of TIMMDC1 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).

Suitable for use as control antibody for TIMMDC1 siRNA (h): sc-78506, Timmdc1 siRNA (m): sc-140081, TIMMDC1 shRNA Plasmid (h): sc-78506-SH, Timmdc1 shRNA Plasmid (m): sc-140081-SH, TIMMDC1 shRNA (h) Lentiviral Particles: sc-78506-V and Timmdc1 shRNA (m) Lentiviral Particles: sc-140081-V.

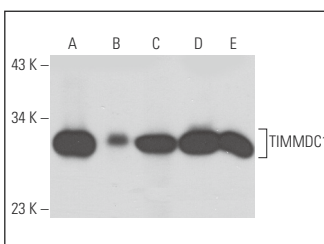
Molecular Weight of TIMMDC1: 32 kDa.

Positive Controls: human heart extract: sc-363763, U-937 cell lysate: sc-2239 or Hep G2 cell lysate: sc-2227.

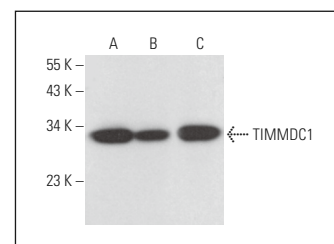
## RECOMMENDED SUPPORT REAGENTS

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



TIMMDC1 (G-10): sc-514927. Western blot analysis of TIMMDC1 expression in human heart (A) and human skeletal muscle (B) tissue extracts and U-937 (C), A-375 (D) and Hep G2 (E) whole cell lysates.



TIMMDC1 (G-10): sc-514927. Western blot analysis of TIMMDC1 expression in A-375 (A), A-673 (B) and NAMALWA (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Wang, T., et al. 2021. C9orf72 regulates energy homeostasis by stabilizing mitochondrial complex I assembly. Cell Metab. 33: 531-546.e9.

## RESEARCH USE

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

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