

QTRT1 (D-7): sc-398918



The Power to Question

BACKGROUND

QTRT1 (queuine tRNA-ribosyltransferase 1) is a 403 amino acid protein that belongs to the queuine tRNA-ribosyltransferase family. QTRT1 interacts with QTRTD1 to form an active queuine tRNA-ribosyltransferase. This enzyme exchanges queuine for the guanine at the wobble position of tRNAs with GUN anticodons, thereby forming the hypermodified nucleoside queuosine. In both QTRT1 and QTRTD1, the four key residues responsible for Zn²⁺ binding, Cys302, Cys304, Cys307, and His333, are conserved. QTRT1 binds one zinc ion per subunit. The QTRT1 gene is conserved in chimpanzee, canine, bovine, mouse, rat, zebrafish, fruit fly, mosquito, *C. elegans*, *S. pombe*, *M. grisea*, *N. crassa*, rice and *P. falciparum*, and maps to human chromosome 19p13.2.

REFERENCES

1. Deshpande, K.L. and Katze, J.R. 2001. Characterization of cDNA encoding the human tRNA-guanine transglycosylase (TGT) catalytic subunit. *Gene* 265: 205-212.
2. Grimwood, J., et al. 2004. The DNA sequence and biology of human chromosome 19. *Nature* 428: 529-535.
3. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609615. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: QTRT1 (human) mapping to 19p13.2; Qtrt1 (mouse) mapping to 9 A3.

SOURCE

QTRT1 (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 111-136 within an internal region of QTRT1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

QTRT1 (D-7) is available conjugated to agarose (sc-398918 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398918 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398918 PE), fluorescein (sc-398918 FITC), Alexa Fluor® 488 (sc-398918 AF488), Alexa Fluor® 546 (sc-398918 AF546), Alexa Fluor® 594 (sc-398918 AF594) or Alexa Fluor® 647 (sc-398918 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398918 AF680) or Alexa Fluor® 790 (sc-398918 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398918 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

QTRT1 (D-7) is recommended for detection of QTRT1 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 QTRT1 siRNA (h): sc-97223, QTRT1 siRNA (m): sc-152616, QTRT1 shRNA Plasmid (h): sc-97223-SH, QTRT1 shRNA Plasmid (m): sc-152616-SH, QTRT1 shRNA (h) Lentiviral Particles: sc-97223-V and QTRT1 shRNA (m) Lentiviral Particles: sc-152616-V.

Molecular Weight of QTRT1: 44 kDa.

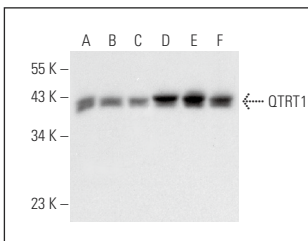
Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SUPPORT REAGENTS

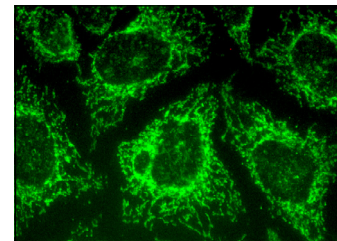
To ensure optimal results, the following support reagents are recommended:

- 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



QTRT1 (D-7): sc-398918. Western blot analysis of QTRT1 expression in Jurkat (A), NTERA-2 cl.D1 (B), MCF7 (C), SK-BR-3 (D), PC-3 (E) and HeLa (F) whole cell lysates.



QTRT1 (D-7): sc-398918. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization.

SELECT PRODUCT CITATIONS

1. Zhang, J., et al. 2020. tRNA queuosine modification enzyme modulates the growth and microbiome recruitment to breast tumors. *Cancers* 12: 628.
2. Zhang, J., et al. 2023. Disruption to tRNA modification by queuine contributes to inflammatory bowel disease. *Cell. Mol. Gastroenterol. Hepatol.* 15: 1371-1389.

STORAGE

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