SANTA CRUZ BIOTECHNOLOGY, INC.

PUS1 (F-9): sc-376331

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PUS1 (psuedouridine synthase 1) belongs to the tRNA pseudouridine synthase truA family. PUS1 functions in the conversion of uridine into pseudouridine after the nucleotide has been incorporated into RNA. It may have a functional role in tRNAs and is also thought to assist in the peptidyl transfer reaction of rRNAs. As a nucleus-resident protein, PUS1 forms a complex with RARG and the SRA1 RNA. PUS1 is widely expressed, with highest levels of expression in the brain and skeletal muscle tissues. Defects in PUS1 are a cause of myopathy with lactic acidosis and sideroblastic anemia (MLASA), also known as mitochondrial myopathy and sideroblastic anemia. MLASA is a rare autosomal recessive oxidative phosphorylation disorder specific to bone marrow and skeletal muscle. The deduced human PUS1 protein contains 348 amino acids and shares 92% sequence homology with mouse PUS1.

REFERENCES

1. Arluison, V., et al. 1998. Transfer RNA-pseudouridine synthetase Pus1 of *Saccharomyces cerevisiae* contains one atom of zinc essential for its native conformation and tRNA recognition. Biochemistry 37: 7268-7276.
2. Arluison, V., et al. 1999. RNA:pseudouridine synthetase Pus1 from *Saccharomyces cerevisiae:* oligomerization property and stoichiometry of the complex with yeast tRNA(Phe). Biochimie 81: 751-756.
3. Arluison, V., et al. 1999. Pseudouridine synthetase Pus1 of *Saccharomyces cerevisiae:* kinetic characterisation, tRNA structural requirement and real-time analysis of its complex with tRNA. J. Mol. Biol. 289: 491-502.
4. Chen, J. and Patton, J.R. 1999. Cloning and characterization of a mammalian pseudouridine synthase. RNA 5: 409-419.
5. Chen, J. and Patton, J.R. 2000. Mouse pseudouridine synthase 1: gene structure and alternative splicing of pre-mRNA. Biochem. J. 352: 465-473.

CHROMOSOMAL LOCATION

Genetic locus: PUS1 (human) mapping to 12q24.33; Pus1 (mouse) mapping to 5 F.

SOURCE

PUS1 (F-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 53-91 near the N-terminus of PUS1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-376331 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-376331 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

PUS1 (F-9) is recommended for detection of PUS1 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PUS1 (F-9) is also recommended for detection of PUS1 in additional species, including canine and porcine.

Suitable for use as control antibody for PUS1 siRNA (h): sc-61417, PUS1 siRNA (m): sc-61418, PUS1 shRNA Plasmid (h): sc-61417-SH, PUS1 shRNA Plasmid (m): sc-61418-SH, PUS1 shRNA (h) Lentiviral Particles: sc-61417-V and PUS1 shRNA (m) Lentiviral Particles: sc-61418-V.

PUS1 (F-9) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

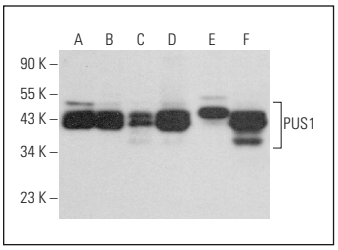
Molecular Weight of PUS1 isoform 1/2: 47/44 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or Jurkat whole cell lysate: sc-2204.

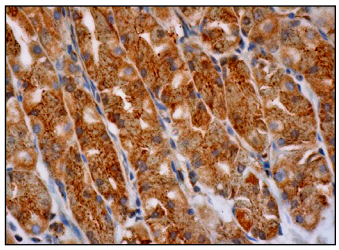
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PUS1 (F-9): sc-376331. Western blot analysis of PUS1 expression in HeLa (**A**), A-431 (**B**), Jurkat (**C**), HEL 92.1.7 (**D**), PC-3 (**E**) and HL-60 (**F**) whole cell lysates.



PUS1 (F-9): sc-376331. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells.

RESEARCH USE

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