

dUTPase (G-6): sc-166838

BACKGROUND

dUTPase (deoxyuridine 5'-triphosphate nucleotidohydrolase), also known as DUT or dUTP pyrophosphatase, is a preventive DNA repair enzyme that functions in nucleotide metabolism. dUTPase is expressed in a variety of tissues and, depending on the isoform (DUT-N or DUT-M), localizes to the nucleus or the mitochondrion. The nuclear isoform, DUT-N, is the most abundant of the two isoforms. dUTPase, in the presence of magnesium ions, is responsible for hydrolyzing dUTP to dUMP and diphosphate. This reaction is important for keeping the intracellular dUTP concentration low so that uracil does not become incorporated into DNA. Extensive incorporation of uracil into DNA can ultimately lead to cell death. This suggests that dUTPase is essential for cell viability, further implying that dUTPase is a potential target for anticancer therapy. In addition, dUMP, the product of the hydrolysis reaction, is a precursor of thymidine nucleotides which are essential for DNA replication.

CHROMOSOMAL LOCATION

Genetic locus: DUT (human) mapping to 15q21.1.

SOURCE

dUTPase (G-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 100-125 within an internal region of dUTPase 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.

Blocking peptide available for competition studies, sc-166838 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

dUTPase (G-6) is recommended for detection of dUTPase of 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).

Suitable for use as control antibody for dUTPase siRNA (h): sc-62242, dUTPase shRNA Plasmid (h): sc-62242-SH and dUTPase shRNA (h) Lentiviral Particles: sc-62242-V.

Molecular Weight of dUTPase nuclear isoform: 22 kDa.

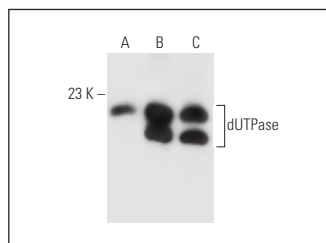
Molecular Weight of dUTPase mitochondrial isoform: 23 kDa.

Positive Controls: dUTPase (h2): 293T Lysate: sc-115300, Ramos cell lysate: sc-2216 or HeLa whole cell lysate: sc-2200.

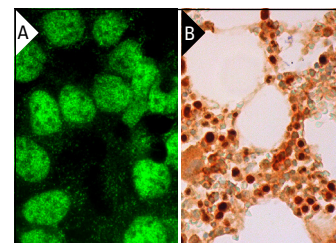
RECOMMENDED SUPPORT REAGENTS

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



dUTPase (G-6): sc-166838. Western blot analysis of dUTPase expression in non-transfected 293T: sc-117752 (A), human dUTPase transfected 293T: sc-115300 (B) and HeLa (C) whole cell lysates.



dUTPase (G-6): sc-166838. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing nuclear and cytoplasmic staining of hematopoietic cells (B).

SELECT PRODUCT CITATIONS

1. Weng, G.X., et al. 2021. Mitochondrial DUT-M potentiates RLR-mediated antiviral signaling by enhancing VISA and TRAF2 association. *Mol. Immunol.* 132: 117-125.

RESEARCH USE

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

PROTOCOLS

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