

dUTPase (F-6): sc-166758

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; Dut (mouse) mapping to 2 F1.

SOURCE

dUTPase (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 189-222 near the C-terminus of dUTPase 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.

Blocking peptide available for competition studies, sc-166758 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

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

dUTPase (F-6) is also recommended for detection of dUTPase in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for dUTPase siRNA (h): sc-62242, dUTPase siRNA (m): sc-62243, dUTPase shRNA Plasmid (h): sc-62242-SH, dUTPase shRNA Plasmid (m): sc-62243-SH, dUTPase shRNA (h) Lentiviral Particles: sc-62242-V and dUTPase shRNA (m) Lentiviral Particles: sc-62243-V.

Molecular Weight of dUTPase nuclear isoform: 22 kDa.

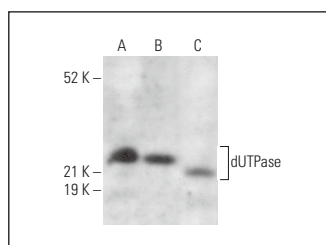
Molecular Weight of dUTPase mitochondrial isoform: 23 kDa.

Positive Controls: dUTPase (m2): 293T Lysate: sc-126749, HeLa whole cell lysate: sc-2200 or Ramos cell lysate: sc-2216.

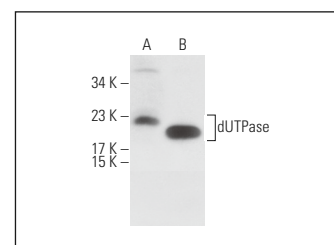
RECOMMENDED SUPPORT REAGENTS

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



dUTPase (F-6): sc-166758. Western blot analysis of dUTPase expression in HeLa (A), Ramos (B) and 3T3-L1 (C) whole cell lysates.



dUTPase (F-6): sc-166758. Western blot analysis of dUTPase expression in non-transfected: sc-117752 (A) and mouse dUTPase transfected: sc-126749 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kato, A., et al. 2014. Phosphorylation of herpes simplex virus 1 dUTPase upregulated viral dUTPase activity to compensate for low cellular dUTPase activity for efficient viral replication. J. Virol. 88: 7776-7785.
2. Kato, A., et al. 2020. Identification of a herpes simplex virus 1 gene encoding neurovirulence factor by chemical proteomics. Nat. Commun. 11: 4894.

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.

PROTOCOLS

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