dUTPase (deoxyuridine 5’-triphosphate nucleotidohydrolase), also known as DUT or dUTPyrophosphatase, 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.

REFERENCES


CHROMOSOMAL LOCATION

Genetic locus: DUT (human) mapping to 15q21.1; Dut (mouse) mapping to 2 F1.

SOURCE

dUTPase (H-9) 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 IgG3 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-166856 P (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

dUTPase (H-9) 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), 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).

dUTPase (H-9) is also recommended for detection of dUTPase in additional species, including canine, bovine and porcine.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG Fc-HRP: sc-516102 or m-IgG 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-2000 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG Fc-HRP: sc-516140 or m-IgG Fc-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-IgG HRP-BP: sc-516102 with DAB, 50X: sc-24982 and Immunohistolmount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA

dUTPase (H-9): sc-166856. Near-infrared western blot analysis of dUTPase expression in Ramos (A), HeLa (B) and F9 (C) whole cell lysates. Blotted with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG HRP (Cruz 680) or sc-516180.

dUTPase (H-9): sc-166856. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear and cytoplasmic staining of cells in germinal center.

STORAGE

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