SANTA CRUZ BIOTECHNOLOGY, INC.

UMPS (A-9): sc-398086

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Uridine 5'-monophosphate synthase (UMPS) catalyzes the last two steps of the pyrimidine biosynthetic pathway. Unlike prokaryotes, UMPS in eukaryotes combines the orotate phosphoribosyltransferase and the orotidine-5'-monophosphate (OMP) decarboxylase activities into a single protein. The union of these two enzymes is thought to stabilize the catalytic centers due to the low molar concentration of the protein in mammalian cells. Loss of either enzymatic activity results in hereditary orotic aciduria, a rare autosomal recessive disorder characterized by retarded growth, anemia and excessive urinary excretion of orotic acid. Two isoforms of UMPS exist as a result of alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: UMPS (human) mapping to 3q21.2; Umps (mouse) mapping to 16 B3.

SOURCE

UMPS (A-9) is a mouse monoclonal antibody raised against amino acids 208-445 mapping within an internal region of UMPS of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UMPS (A-9) is available conjugated to agarose (sc-398086 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398086 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398086 PE), fluorescein (sc-398086 FITC), Alexa Fluor® 488 (sc-398086 AF488), Alexa Fluor® 546 (sc-398086 AF546), Alexa Fluor® 594 (sc-398086 AF594) or Alexa Fluor® 647 (sc-398086 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398086 AF680) or Alexa Fluor® 790 (sc-398086 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

UMPS (A-9) is recommended for detection of UMPS 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 UMPS siRNA (h): sc-78096, UMPS siRNA (m): sc-154917, UMPS shRNA Plasmid (h): sc-78096-SH, UMPS shRNA Plasmid (m): sc-154917-SH, UMPS shRNA (h) Lentiviral Particles: sc-78096-V and UMPS shRNA (m) Lentiviral Particles: sc-154917-V.

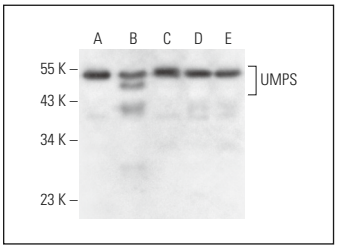
Molecular Weight of UMPS: 52/33 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, U-251-MG whole cell lysates: sc-364176 or HeLa whole cell lysate: sc-2200.

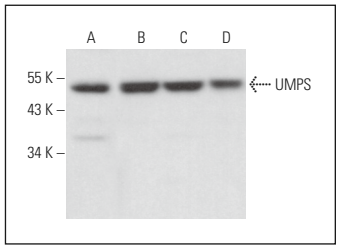
RECOMMENDED SUPPORT REAGENTS

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.

DATA



UMPS (A-9): sc-398086. Western blot analysis of UMPS expression in MOLT-4 (**A**), IMR-32 (**B**), HeLa (**C**), U-251-MG (**D**) and Hs 181 Tes (**E**) whole cell lysates.



UMPS (A-9): sc-398086. Western blot analysis of UMPS expression in HeLa (**A**), WEHI-231 (**B**), NIH/3T3 (**C**) and RAW 264.7 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Bajzikova, M., et al. 2019. Reactivation of dihydroorotate dehydrogenase-driven pyrimidine biosynthesis restores tumor growth of respiration-deficient cancer cells. Cell Metab. 29: 399-416.e10.
2. Hubackova, S., et al. 2020. Replication and ribosomal stress induced by targeting pyrimidine synthesis and cellular checkpoints suppress p53-deficient tumors. Cell Death Dis. 11: 110.
3. Regmi, P., et al. 2020. SAHA overcomes 5-FU resistance in IFIT2-depleted oral squamous cell carcinoma cells. Cancers 12: 3527.

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.