SANTA CRUZ BIOTECHNOLOGY, INC.

SUMF1 (B-9): sc-376035

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Sulfatases are enzymes that remove sulfate residues from a variety of substrates via the hydrolysis of sulfate esters. In order to function properly, sulfatases require the presence of Cα-formylglycine (FGly), a unique amino acid, in their active site. This amino acid is synthesized by enzymes that use a cysteine to posttranslationally generate FGly. SUMF1 (sulfatase modifying factor 1), also known as FGE, is a 374 amino acid alternatively spliced protein that localizes to the lumen of the endoplasmic reticulum and belongs to the sulfatase-modifying factor family. Expressed ubiquitously with highest expression in liver, kidney and pancreas, SUMF1 exists as either a monomer, a homodimer or a heterodimer (with SUMF2) and functions to oxidize sulfatase cysteine residues to an active FGly residue, thereby playing an important role in sulfatase activity. Defects in the gene encoding SUMF1 are the cause of multiple sulfatase deficiency (MSD), a heterogeneous disorder characterized by meta-chromatic leukodystrophy, mucopolysaccharidosis, chondrodysplasia punctata, hydrocephalus, ichthyosis, neurologic deterioration and developmental delay.

REFERENCES

1. Cosma, M.P., et al. 2003. The multiple sulfatase deficiency gene encodes an essential and limiting factor for the activity of sulfatases. Cell 113: 445-456.
2. Zito, E., et al. 2005. Sulphatase activities are regulated by the interaction of sulphatase-modifying factor 1 with SUMF2. EMBO Rep. 6: 655-660.
3. Fraldi, A., et al. 2007. SUMF1 enhances sulfatase activities *in vivo* in five sulfatase deficiencies. Biochem. J. 403: 305-312.
4. Zito, E., et al. 2007. Sulfatase modifying factor 1 trafficking through the cells: from endoplasmic reticulum to the endoplasmic reticulum. EMBO J. 26: 2443-2453.

CHROMOSOMAL LOCATION

Genetic locus: SUMF1 (human) mapping to 3p26.1; Sumf1 (mouse) mapping to 6 E1.

SOURCE

SUMF1 (B-9) is a mouse monoclonal antibody raised against amino acids 225-355 mapping near the C-terminus of SUMF1 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.

SUMF1 (B-9) is available conjugated to agarose (sc-376035 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376035 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376035 PE), fluorescein (sc-376035 FITC), Alexa Fluor® 488 (sc-376035 AF488), Alexa Fluor® 546 (sc-376035 AF546), Alexa Fluor® 594 (sc-376035 AF594) or Alexa Fluor® 647 (sc-376035 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376035 AF680) or Alexa Fluor® 790 (sc-376035 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

SUMF1 (B-9) is recommended for detection of SUMF1 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 SUMF1 siRNA (h): sc-76610, SUMF1 siRNA (m): sc-76611, SUMF1 siRNA (r): sc-270228, SUMF1 shRNA Plasmid (h): sc-76610-SH, SUMF1 shRNA Plasmid (m): sc-76611-SH, SUMF1 shRNA Plasmid (r): sc-270228-SH, SUMF1 shRNA (h) Lentiviral Particles: sc-76610-V, SUMF1 shRNA (m) Lentiviral Particles: sc-76611-V and SUMF1 shRNA (r) Lentiviral Particles: sc-270228-V.

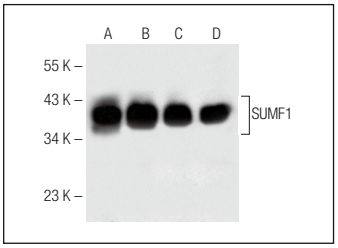
Molecular Weight of SUMF1: 42 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, Caki-1 cell lysate: sc-2224 or HeLa whole cell lysate: sc-2200.

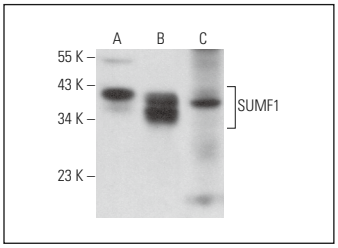
RECOMMENDED SUPPORT REAGENTS

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



SUMF1 (B-9): sc-376035. Western blot analysis of SUMF1 expression in MIA PaCa-2 (**A**), Caki-1 (**B**), Hep G2 (**C**) and HeLa (**D**) whole cell lysates.



SUMF1 (B-9): sc-376035. Western blot analysis of SUMF1 expression in Hep G2 (**A**) and ZR-75-1 (**B**) whole cell lysates and mouse kidney tissue extract (**C**).

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.