

SUMF2 (E-14): sc-104677

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 C α -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. SUMF2 (sulfatase-modifying factor 2), also known as pFGE or PSEC0171, is a 301 amino acid protein that belongs to the sulfatase-modifying factor family and is expressed in lung, heart, placenta, brain, liver, pancreas, skeletal muscle and kidney. Localized to the lumen of the endoplasmic reticulum (ER), SUMF2 acts as an FGly-generating enzyme that, when functioning alone, has low catalytic activity. When present in a heterodimer with SUMF1 (another FGly-generating protein), SUMF2 exhibits higher rates of catalysis. Four isoforms of SUMF2 are expressed due to alternative splicing events.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607940. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Landgrebe, J., Dierks, T., Schmidt, B. and von Figura, K. 2003. The human SUMF1 gene, required for posttranslational sulfatase modification, defines a new gene family which is conserved from pro- to eukaryotes. *Gene* 316: 47-56.
3. Dierks, T., Schmidt, B., Borissenko, L.V., Peng, J., Preusser, A., Mariappan, M. and von Figura, K. 2003. Multiple sulfatase deficiency is caused by mutations in the gene encoding the human C α -formylglycine generating enzyme. *Cell* 113: 435-444.
4. Cosma, M.P., Pepe, S., Annunziata, I., Newbold, R.F., Grompe, M., Parenti, G. and Ballabio, A. 2003. The multiple sulfatase deficiency gene encodes an essential and limiting factor for the activity of sulfatases. *Cell* 113: 445-456.
5. Zito, E., Fraldi, A., Pepe, S., Annunziata, I., Kobinger, G., Di Natale, P., Ballabio, A. and Cosma, M.P. 2005. Sulphatase activities are regulated by the interaction of sulphatase-modifying factor 1 with SUMF2. *EMBO Rep.* 6: 655-660.
6. Mariappan, M., Preusser-Kunze, A., Balleininger, M., Eiselt, N., Schmidt, B., Gande, S.L., Wenzel, D., Dierks, T. and von Figura, K. 2005. Expression, localization, structural, and functional characterization of pFGE, the paralog of the C α -formylglycine-generating enzyme. *J. Biol. Chem.* 280: 15173-15179.
7. Dickmanns, A., Schmidt, B., Rudolph, M.G., Mariappan, M., Dierks, T., von Figura, K. and Ficner, R. 2005. Crystal structure of human pFGE, the paralog of the C α -formylglycine-generating enzyme. *J. Biol. Chem.* 280: 15180-15187.

CHROMOSOMAL LOCATION

Genetic locus: SUMF2 (human) mapping to 7p11.2.

RESEARCH USE

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

SOURCE

SUMF2 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SUMF2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-104677 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SUMF2 (E-14) is recommended for detection of SUMF2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

SUMF2 (E-14) is also recommended for detection of SUMF2 in additional species, including equine and bovine.

Suitable for use as control antibody for SUMF2 siRNA (h): sc-89517, SUMF2 shRNA Plasmid (h): sc-89517-SH and SUMF2 shRNA (h) Lentiviral Particles: sc-89517-V.

Molecular Weight of SUMF2: 32 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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