SANTA CRUZ BIOTECHNOLOGY, INC.

UFSP2 (H-186): sc-292068

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

UFM1 (ubiquitin-fold modifier 1) is a ubiquitin-like protein that is conjugated to target proteins by UBA5, an E1-like activating enzyme, and Ufc1, an E2-like conjugating enzyme. Through these interactions, UFM1 conjugates to target proteins by a covalent linkage. UFSP2 (Ufm1-specific protease 2) is a 469 amino acid thiol protease that specifically cleaves UFM1 precursor and leads to exposure of its conserved C-terminal glycine, a step required prior to conjugation to target proteins. UFSP2 is also capable of releasing UFM1 from UFM1-conjugated cellular proteins. The gene encoding UFSP2 maps to human chromosome 4, which houses nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Tanaka, K., et al. 1998. The ligation systems for ubiquitin and ubiquitin-like proteins. Mol. Cells 8: 503-512.
2. Wilson, M.D., et al. 2001. Comparative analysis of the gene-dense ACHE/TFR2 region on human chromosome 7q22 with the orthologous region on mouse chromosome 5. Nucleic Acids Res. 29: 1352-1365.
3. Komatsu, M., et al. 2004. A novel protein-conjugating system for Ufm1, a ubiquitin-fold modifier. EMBO J. 23: 1977-1986.
4. Kang, S.H., et al. 2007. Two novel ubiquitin-fold modifier 1 (Ufm1)-specific proteases, UfSP1 and UfSP2. J. Biol. Chem. 282: 5256-5262.
5. Ha, B.H., et al. 2008. Structural basis for Ufm1 processing by UfSP1. J. Biol. Chem. 283: 14893-14900.
6. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 611482. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Eijgelsheim, M., et al. 2010. Genome-wide association analysis identifies multiple loci related to resting heart rate. Hum. Mol. Genet. 19: 3885-3894.

CHROMOSOMAL LOCATION

Genetic locus: UFSP2 (human) mapping to 4q35.1; Ufsp2 (mouse) mapping to 8 B1.1.

SOURCE

UFSP2 (H-186) is a rabbit polyclonal antibody raised against amino acids 155-340 mapping within an internal region of UFSP2 of human origin.

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.

PRODUCT

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

APPLICATIONS

UFSP2 (H-186) is recommended for detection of UFSP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

UFSP2 (H-186) is also recommended for detection of UFSP2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UFSP2 siRNA (h): sc-89115, UFSP2 siRNA (m): sc-154893, UFSP2 shRNA Plasmid (h): sc-89115-SH, UFSP2 shRNA Plasmid (m): sc-154893-SH, UFSP2 shRNA (h) Lentiviral Particles: sc-89115-V and UFSP2 shRNA (m) Lentiviral Particles: sc-154893-V.

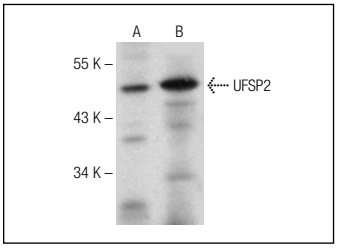
Molecular Weight of UFSP2: 53 kDa.

Positive Controls: mouse heart extract: sc-2254 or mouse pancreas extract: sc-364244.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



UFSP2 (H-186): sc-292068. Western blot analysis of UFSP2 expression in mouse pancreas (**A**) and mouse heart (**B**) tissue extracts.

RESEARCH USE

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