

# UFSP1 (P-13): sc-163496

## 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. UFSP1 (Ufm1-specific protease 1) is a 142 amino acid thiol protease that cleaves UFM1 precursor and leads to exposure of its conserved C-terminal glycine, a step required prior to conjugation to target proteins. UFSP1 is also capable of releasing UFM1 from UFM1-conjugated cellular proteins. The gene encoding UFSP1 maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

## 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. Eijgelsheim, M., et al. 2010. Genome-wide association analysis identifies multiple loci related to resting heart rate. *Hum. Mol. Genet.* 19: 3885-3894.
7. Tatsumi, K., et al. 2010. A novel type of E3 ligase for the Ufm1 conjugation system. *J. Biol. Chem.* 285: 5417-5427.

## CHROMOSOMAL LOCATION

Genetic locus: UFSP1 (human) mapping to 7q22.1; Ufsp1 (mouse) mapping to 5 G2.

## SOURCE

UFSP1 (P-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of UFSP1 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-163496 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

UFSP1 (P-13) is recommended for detection of UFSP1 of mouse, rat and 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); non cross-reactive with UFSP2.

UFSP1 (P-13) is also recommended for detection of UFSP1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for UFSP1 siRNA (h): sc-89334, UFSP1 siRNA (m): sc-154892, UFSP1 shRNA Plasmid (h): sc-89334-SH, UFSP1 shRNA Plasmid (m): sc-154892-SH, UFSP1 shRNA (h) Lentiviral Particles: sc-89334-V and UFSP1 shRNA (m) Lentiviral Particles: sc-154892-V.

Molecular Weight of UFSP1: 15 kDa.

## 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.