

# USP18 (V-20): sc-50019

## BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. A wide range of enzymes facilitate the proteolytic Ub pathway, including the ubiquitin specific peptidase, USP18 (also designated interferon-stimulated gene 43 (ISG43), ISG15-specific-processing protease, Ubl carboxyl-terminal hydrolase 18 and Ubp43). USP18, a member of the peptidase C19 family, maintains a critical cellular balance of ISG15-conjugated proteins in stressed and healthy organisms. It can efficiently cleave ISG15 fusions including native ISG15 conjugates linked by isopeptide bonds. In mice, deletion of the USP18 gene leads to a large increase of ISG15 conjugates in tissues. USP18 expression is negatively regulated by RNase-L and induced by interferon.

## REFERENCES

1. Liu, L.Q., et al. 1999. A novel ubiquitin-specific protease, UBP4, cloned from leukemia fusion protein AML1-ETO-expressing mice, functions in hematopoietic cell differentiation. *Mol. Cell. Biol.* 19: 3029-3038.
2. Schwer, H., et al 2000. Cloning and characterization of a novel human ubiquitin-specific protease, a homologue of murine UBP43 (Usp18). *Genomics* 65: 44-52.
3. Li, X.L., et al. 2000. RNase-L-dependent destabilization of interferon-induced mRNAs. A role for the 2-5A system in attenuation of the interferon response. *J. Biol. Chem.* 275: 8880-8888.
4. Malakhov, M.P., et al. 2002. UBP43 (USP18) specifically removes ISG15 from conjugated proteins. *J. Biol. Chem.* 277: 9976-9981.
5. Tokarz, S., et al. 2004. The ISG15 isopeptidase UBP43 is regulated by proteolysis via the SCFskp2 ubiquitin ligase. *J. Biol. Chem.* 279: 46424-46430.
6. Osiak, A., et al. 2005. ISG15, an interferon-stimulated ubiquitin-like protein, is not essential for Stat1 signaling and responses against vesicular stomatitis and lymphocytic choriomeningitis virus. *Mol. Cell. Biol.* 25: 6338-6345.
7. Malakhova, O.A., et al. 2006. UBP43 is a novel regulator of interferon signaling independent of its ISG15 isopeptidase activity. *EMBO J.* 25: 2358-2367.
8. Catic, A., et al. 2007. Screen for ISG15-crossreactive deubiquitinases. *PLoS ONE* 2: 679

## CHROMOSOMAL LOCATION

Genetic locus: Usp18 (mouse) mapping to 6 F1.

## SOURCE

USP18 (V-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of USP18 of mouse origin.

## RESEARCH USE

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

## 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-50019 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

USP18 (V-20) is recommended for detection of USP18 of mouse and rat 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).

Suitable for use as control antibody for USP18 siRNA (m): sc-60866, USP18 shRNA Plasmid (m): sc-60866-SH and USP18 shRNA (m) Lentiviral Particles: sc-60866-V.

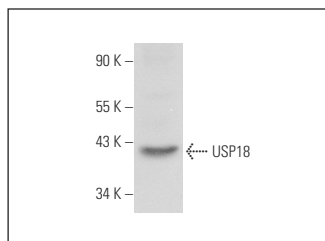
Molecular Weight of USP18: 43 kDa.

Positive Controls: mouse skin extract: sc-364251.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



USP18 (V-20): sc-50019. Western blot analysis of USP18 expression in mouse skin tissue extract.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.