

# USP11 (P-18): sc-55801

## BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. Through the use of a wide range of enzymes that can add or remove ubiquitin, the Ub pathway controls many intracellular processes such as signal transduction, transcriptional activation and cell cycle progression. USP11 (ubiquitin specific peptidase 11), also known as UHX1, is a 920 amino acid deubiquitinating enzyme that participates in the Ub pathway. Localized to the nucleus, USP11 associates with both Ran BP-M (Ran binding protein-M) and with the tumor suppressor BRCA2. Through these associations, USP11 functions to either inhibit ubiquitination of these proteins or to remove ubiquitin residues that have already been attached to these proteins. USP11 is implicated in several X-linked retinal diseases and, due to its ability to deubiquitinate BRCA2, may play a role in tumor suppression.

## REFERENCES

- Swanson, D.A., Freund, C.L., Ploder, L., McInnes, R.R. and Valle, D. 1996. A ubiquitin C-terminal hydrolase gene on the proximal short arm of the X chromosome: implications for X-linked retinal disorders. *Hum. Mol. Genet.* 5: 533-538.
- Brandau, O., Nyakatura, G., Jedele, K.B., Platzer, M., Achatz, H., Ross, M., Murken, J., Rosenthal, A. and Meindl, A. 1998. UHX1 and PCTK1: precise characterisation and localisation within a gene-rich region in Xp11.23 and evaluation as candidate genes for retinal diseases mapped to Xp21.1-p11.2. *Eur. J. Hum. Genet.* 6: 459-466.
- Ideguchi, H., Ueda, A., Tanaka, M., Yang, J., Tsuji, T., Ohno, S., Hagiwara, E., Aoki, A. and Ishigatsubo, Y. 2002. Structural and functional characterization of the USP11 deubiquitinating enzyme, which interacts with the RanGTP-associated protein Ran BP-M. *Biochem. J.* 367: 87-95.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300050. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Schoenfeld, A.R., Apgar, S., Dolios, G., Wang, R. and Aaronson, S.A. 2004. BRCA2 is ubiquitinated *in vivo* and interacts with USP11, a deubiquitinating enzyme that exhibits pro-survival function in the cellular response to DNA damage. *Mol. Cell. Biol.* 24: 7444-7455.
- Yamaguchi, T., Kimura, J., Miki, Y. and Yoshida, K. 2007. The deubiquitinating enzyme USP11 controls an I $\kappa$ B kinase  $\alpha$  (IKK $\alpha$ )-p53 signaling pathway in response to tumor necrosis factor  $\alpha$  (TNF $\alpha$ ). *J. Biol. Chem.* 282: 33943-33948.

## CHROMOSOMAL LOCATION

Genetic locus: Usp11 (mouse) mapping to X A1.3.

## SOURCE

USP11 (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of USP11 of mouse origin.

## RESEARCH USE

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

## PRODUCT

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

Blocking peptide available for competition studies, sc-55801 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

USP11 (P-18) is recommended for detection of USP11 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

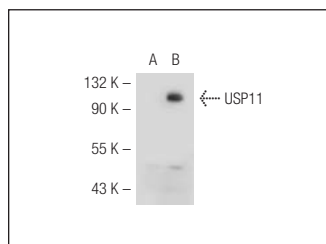
Suitable for use as control antibody for USP11 siRNA (m): sc-63194, USP11 shRNA Plasmid (m): sc-63194-SH and USP11 shRNA (m) Lentiviral Particles: sc-63194-V.

Molecular Weight of USP11: 110 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) 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



USP11 (P-18): sc-55801. Western blot analysis of USP11 expression in non-transfected: sc-117752 (A) and mouse USP11 transfected: sc-124490 (B) 293T whole cell lysates.

## 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.