

USP15 (2D5): sc-100629



The Power to Question

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. USP15 (ubiquitin specific peptidase 15), also known as UNPH4, is a member of the peptidase C19 family of proteins. Expressed in kidney, liver, placenta, ovary, lung, thymus, heart and skeletal muscle, USP15 localizes to the cytoplasm and the nucleus, contains one DUSP domain and functions as a deubiquitinating enzyme that cleaves ubiquitin residues from both ubiquitinated proteins and ubiquitin-fused precursors, thereby saving these proteins from proteasomal degradation. Via its DUSP domain, USP15 plays a role in the regulation of the COP9 signalosome (CSN) complex. Three isoforms exist for USP15 due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: USP15 (human) mapping to 12q14.1; Usp15 (mouse) mapping to 10 D2.

SOURCE

USP15 (2D5) is a mouse monoclonal antibody raised against recombinant USP15 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 for detailed protocols and support products.

APPLICATIONS

USP15 (2D5) is recommended for detection of USP15 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).

Suitable for use as control antibody for USP15 siRNA (h): sc-76819, USP15 siRNA (m): sc-76820, USP15 shRNA Plasmid (h): sc-76819-SH, USP15 shRNA Plasmid (m): sc-76820-SH, USP15 shRNA (h) Lentiviral Particles: sc-76819-V and USP15 shRNA (m) Lentiviral Particles: sc-76820-V.

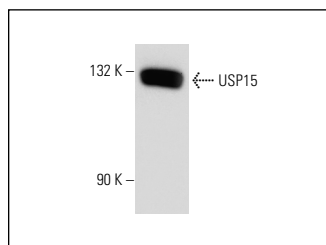
Molecular Weight of USP15: 112 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

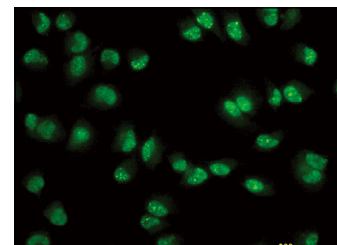
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



USP15 (2D5): sc-100629. Western blot analysis of USP15 expression in HeLa whole cell lysate.



USP15 (2D5): sc-100629. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

- Börner, C., et al. 2013. Inhibition of NFκB by opioids in T cells. *J. Immunol.* 191: 4640-4647.
- Fukagai, K., et al. 2016. USP15 stabilizes the transcription factor Nrf1 in the nucleus, promoting the proteasome gene expression. *Biochem. Biophys. Res. Commun.* 478: 363-370.
- Jin, X., et al. 2018. DUB3 promotes BET inhibitor resistance and cancer progression by deubiquitinating BRD4. *Mol. Cell* 71: 592-605.e4.
- Nieder Korn, M., et al. 2020. TIFAB regulates USP15-mediated p53 signaling during stressed and malignant hematopoiesis. *Cell Rep.* 30: 2776-2790.e6.
- Timani, K.A., et al. 2022. Tip110/SART3-mediated regulation of NF-κB activity by targeting IκBα stability through USP15. *Front. Oncol.* 12: 843157.
- Zhang, T., et al. 2023. Alleviative effect of microRNA-497 on diabetic neuropathic pain in rats in relation to decreased USP15. *Cell Biol. Toxicol.* 39: 1-16.
- Zhang, X., et al. 2024. Stress granule-localized USP8 potentiates cGAS-mediated type I interferonopathies through deubiquitination of DDX3X. *Cell Rep.* 43: 114248.

RESEARCH USE

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