

USP47 (4E7): sc-100633



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. USP47 (ubiquitin specific peptidase 47), also known as TRFP (Trf (TATA binding protein-related factor)-proximal homolog), is a 1,375 amino acid protein that belongs to the peptidase C19 family of proteins. Expressed in skeletal muscle, testis and heart, USP47 contains all of the active residues necessary to function as a deubiquitinating enzyme, but it appears to be catalytically inactive. Three isoforms of USP47 are expressed due to alternative splicing events.

REFERENCES

1. Puente, X.S., et al. 2003. Human and mouse proteases: a comparative genomic approach. *Nat. Rev. Genet.* 4: 544-558.
2. Quesada, V., et al. 2004. Cloning and enzymatic analysis of 22 novel human ubiquitin-specific proteases. *Biochem. Biophys. Res. Commun.* 314: 54-62.

CHROMOSOMAL LOCATION

Genetic locus: USP47 (human) mapping to 11p15.3; Usp47 (mouse) mapping to 7 F1.

SOURCE

USP47 (4E7) is a mouse monoclonal antibody raised against recombinant USP47 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} 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.

APPLICATIONS

USP47 (4E7) is recommended for detection of USP47 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 USP47 siRNA (h): sc-76863, USP47 siRNA (m): sc-76864, USP47 shRNA Plasmid (h): sc-76863-SH, USP47 shRNA Plasmid (m): sc-76864-SH, USP47 shRNA (h) Lentiviral Particles: sc-76863-V and USP47 shRNA (m) Lentiviral Particles: sc-76864-V.

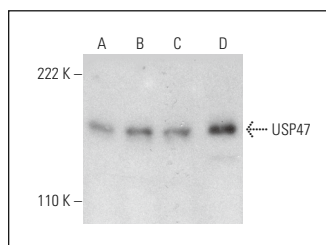
Molecular Weight of USP47: 157 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, U-87 MG cell lysate: sc-2411 or RT-4 whole cell lysate: sc-364257.

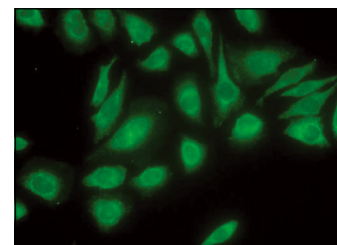
RECOMMENDED SUPPORT REAGENTS

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



USP47 (4E7): sc-100633. Western blot analysis of USP47 expression in HeLa (A), U-87 MG (B), RT-4 (C) and Sol8 (D) whole cell lysates.



USP47 (4E7): sc-100633. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Sako-Kubota, K., et al. 2014. Minus end-directed motor KIFC3 suppresses E-cadherin degradation by recruiting USP47 to adherens junctions. *Mol. Biol. Cell* 25: 3851-3860.
2. Gavory, G., et al. 2018. Discovery and characterization of highly potent and selective allosteric USP7 inhibitors. *Nat. Chem. Biol.* 14: 118-125.
3. Ka, H.I., et al. 2020. Deubiquitinase USP47-stabilized splicing factor IK regulates the splicing of ATM pre-mRNA. *Cell Death Discov.* 6: 34.
4. Lei, H., et al. 2021. Targeting USP47 overcomes tyrosine kinase inhibitor resistance and eradicates leukemia stem/progenitor cells in chronic myelogenous leukemia. *Nat. Commun.* 12: 51.
5. Zhang, A., et al. 2022. USP33 deubiquitinates and stabilizes HIF-2α to promote hypoxia response in glioma stem cells. *EMBO J.* 41: e109187.
6. Mongkolpobsin, K., et al. 2023. Cold atmospheric microwave plasma (CAMP) stimulates dermal papilla cell proliferation by inducing β-catenin signaling. *Sci. Rep.* 13: 3089.
7. Santelices, J., et al. 2023. USP8 inhibition regulates autophagy flux and controls *Salmonella* infection. *Front. Cell. Infect. Microbiol.* 13: 1070271.
8. 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.