

# USP31 (4F2): sc-100634

## 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. USP31 (ubiquitin specific peptidase 31) is a 1,352 amino acid protein that belongs to the peptidase C19 family of proteins. Expressed in a wide variety of tissues, USP31 localizes to the nucleus 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. Two isoforms of USP31 are expressed due to alternative splicing events.

## REFERENCES

1. Puente, X.S., Sánchez, L.M., Overall, C.M. and López-Otín, C. 2003. Human and mouse proteases: a comparative genomic approach. *Nat. Rev. Genet.* 4: 544-558.
2. Lockhart, P.J., Hulihan, M., Lincoln, S., Hussey, J., Skipper, L., Bisceglia, G., Wilkes, K. and Farrer, M.J. 2004. Identification of the human ubiquitin specific protease 31 (USP31) gene: structure, sequence and expression analysis. *DNA Seq.* 15: 9-14.
3. Quesada, V., Díaz-Perales, A., Gutiérrez-Fernández, A., Garabaya, C., Cal, S. and López-Otín, C. 2004. Cloning and enzymatic analysis of 22 novel human ubiquitin-specific proteases. *Biochem. Biophys. Res. Commun.* 314: 54-62.
4. Oh, J.H., Yang, J.O., Hahn, Y., Kim, M.R., Byun, S.S., Jeon, Y.J., Kim, J.M., Song, K.S., Noh, S.M., Kim, S., Yoo, H.S., Kim, Y.S. and Kim, N.S. 2005. Transcriptome analysis of human gastric cancer. *Mamm. Genome* 16: 942-954.

## CHROMOSOMAL LOCATION

Genetic locus: USP31 (human) mapping to 16p12.2.

## SOURCE

USP31 (4F2) is a mouse monoclonal antibody raised against recombinant USP31 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> 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](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

USP31 (4F2) is recommended for detection of USP31 of 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 USP31 siRNA (h): sc-76837, USP31 shRNA Plasmid (h): sc-76837-SH and USP31 shRNA (h) Lentiviral Particles: sc-76837-V.

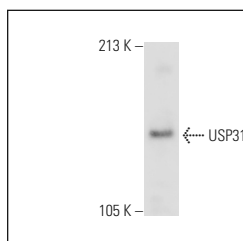
Molecular Weight of USP31: 147 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

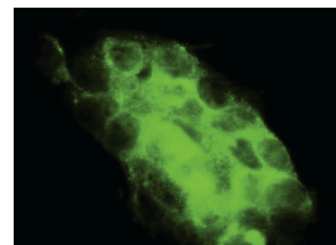
## RECOMMENDED SUPPORT REAGENTS

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



USP31 (4F2): sc-100634. Western blot analysis of USP31 expression in HeLa whole cell lysate.



USP31 (4F2): sc-100634. Immunofluorescence staining of paraformaldehyde-fixed A-431 cells showing cytoplasmic localization.

## RESEARCH USE

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