

# USP34 (3H9): sc-100631

## 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. USP34 (ubiquitin specific peptidase 34) is a 3,395 amino acid protein that belongs to the peptidase C19 family of proteins. Expressed at low levels in brain, USP34 functions as a deubiquitinating enzyme that cleaves ubiquitin residues from both ubiquitinated proteins and ubiquitin-fused precursors, thereby saving these proteins from proteasomal degradation. In response to DNA damage, USP34 is phosphorylated by Atm or ATR. Two isoforms of USP34 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. Ballif, B.A., Villen, J., Beausoleil, S.A., Schwartz, D. and Gygi, S.P. 2004. Phosphoproteomic analysis of the developing mouse brain. *Mol. Cell. Proteomics* 3: 1093-1101.
3. Quesada, V., Díaz-Perales, A., Gutierrez-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. Mu, J.J., Wang, Y., Luo, H., Leng, M., Zhang, J., Yang, T., Besusso, D., Jung, S.Y. and Qin, J. 2007. A proteomic analysis of ataxia telangiectasia-mutated (Atm)/Atm-Rad3-related (ATR) substrates identifies the ubiquitin-proteasome system as a regulator for DNA damage checkpoints. *J. Biol. Chem.* 282: 17330-17334.
5. de Leeuw, N., Pfundt, R., Koolen, D.A., Neefs, I., Scheltinga, I., Mieloo, H., Siermans, E.A., Nillesen, W., Smeets, D.F., de Vries, B.B. and Knoers, N.V. 2008. A newly recognised microdeletion syndrome involving 2p15p16.1: narrowing down the critical region by adding another patient detected by genome wide tiling path array comparative genomic hybridisation analysis. *J. Med. Genet.* 45: 122-124.

## CHROMOSOMAL LOCATION

Genetic locus: USP34 (human) mapping to 2p15.

## SOURCE

USP34 (3H9) is a mouse monoclonal antibody raised against recombinant USP34 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.

## APPLICATIONS

USP34 (3H9) is recommended for detection of USP34 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), immunohistochemistry (including paraffin-embedded sections) (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 USP34 siRNA (h): sc-76841, USP34 shRNA Plasmid (h): sc-76841-SH and USP34 shRNA (h) Lentiviral Particles: sc-76841-V.

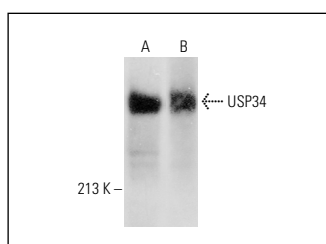
Molecular Weight of USP34: 387 kDa.

Positive Controls: A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

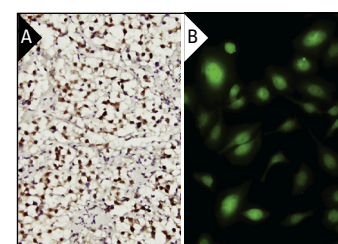
## RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



USP34 (3H9): sc-100631. Western blot analysis of USP34 expression in A549 (A) and HeLa (B) whole cell lysates.



USP34 (3H9): sc-100631. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human seminoma tissue (A). Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (B).

## SELECT PRODUCT CITATIONS

1. Guo, Y.C., Wang, M.Y., Zhang, S.W., Wu, Y.S., Zhou, C.C., Zheng, R.X., Shao, B., Wang, Y., Xie, L., Liu, W.Q., Sun, N.Y., Jing, J.J., Ye, L., Chen, Q.M. and Yuan, Q. 2018. Ubiquitin-specific protease USP34 controls osteogenic differentiation and bone formation by regulating BMP2 signaling. *EMBO J.* 37 pii: e99398.

## RESEARCH USE

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