

USP9 (5G-02): sc-100628

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. USP9 (ubiquitin specific peptidase 9), also known as USP9X, FAF or DFFRX, is a 2,547 amino acid member of the peptidase C19 family of ubiquitin proteases. Expressed ubiquitously in both fetal and adult tissue, USP9 is involved in the processing of ubiquitin precursors and ubiquitinated proteins, thereby preventing degradation and regulating protein turnover. Defects in the gene encoding USP9 are implicated in Turner syndrome, a condition in which oocytes fail to proliferate and develop, leading to the degeneration of the developing ovary. Multiple isoforms encoding long and short transcripts exist due to alternative splicing events.

REFERENCES

1. Brown, G.M., et al. 1998. Characterisation of the coding sequence and fine mapping of the human DFFRY gene and comparative expression analysis and mapping to the Sxrb interval of the mouse Y chromosome of the Dffry gene. *Hum. Mol. Genet.* 7: 97-107.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300072. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Hall, N.M., et al. 2003. Usp9y (ubiquitin-specific protease 9 gene on the Y) is associated with a functional promoter and encodes an intact open reading frame homologous to Usp9x that is under selective constraint. *Mamm. Genome* 14: 437-447.
4. Friocourt, G., et al. 2005. Doublecortin interacts with the ubiquitin protease DFFRX, which associates with microtubules in neuronal processes. *Mol. Cell. Neurosci.* 28: 153-164.
5. Xu, J. 2005. Age-related changes in Usp9x protein expression and DNA methylation in mouse brain. *Brain Res. Mol. Brain Res.* 140: 17-24.
6. Al-Hakim, A.K., et al. 2005. 14-3-3 cooperates with LKB1 to regulate the activity and localization of QSK and SIK. *J. Cell Sci.* 118: 5661-5673.

CHROMOSOMAL LOCATION

Genetic locus: USP9X (human) mapping to Xp11.4.

SOURCE

USP9 (5G-02) is a mouse monoclonal antibody raised against recombinant USP9 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.

RESEARCH USE

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

APPLICATIONS

USP9 (5G-02) is recommended for detection of USP9 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:1000-1:1000), 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 USP9 siRNA (h): sc-63197, USP9 shRNA Plasmid (h): sc-63197-SH and USP9 shRNA (h) Lentiviral Particles: sc-63197-V.

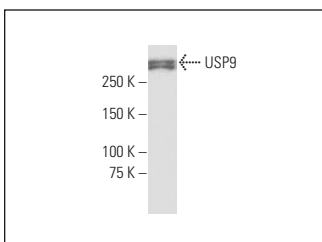
Molecular Weight of USP9: 290 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

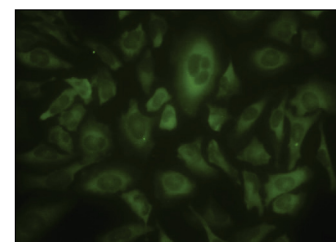
RECOMMENDED SUPPORT REAGENTS

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



USP9 (5G-02): sc-100628. Western blot analysis of USP9 expression in HeLa nuclear extract.



USP9 (5G-02): sc-100628. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Altun, M., et al. 2011. Activity-based chemical proteomics accelerates inhibitor development for deubiquitylating enzymes. *Chem. Biol.* 18: 1401-1412.
2. Zhang, C., et al. 2011. Synergistic antitumor activity of gemcitabine and ABT-737 *in vitro* and *in vivo* through disrupting the interaction of USP9X and Mcl-1. *Mol. Cancer Ther.* 10: 1264-1275.
3. Izrailit, J., et al. 2016. Cellular stress induces TRB3/USP9x-dependent Notch activation in cancer. *Oncogene* 36: 1048-1057.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.