

USP49 (F-14): sc-82409

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. USP49 (ubiquitin specific peptidase 49), also known as ubiquitin thioesterase 49 or deubiquitinating enzyme 49, is a 688 amino acid protein belonging to the peptidase C19 family. USP49 functions to catalyze the conversion of a ubiquitin C-terminal thioester to a free ubiquitin and a thiol. The gene encoding USP49 maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome. Two isoforms of USP49 are produced by alternative splicing events.

REFERENCES

1. Wilkinson, K.D. 1997. Regulation of ubiquitin-dependent processes by deubiquitinating enzymes. *FASEB J.* 11: 1245-1256.
2. Southan, C. 2001. A genomic perspective on human proteases. *FEBS Lett.* 498: 214-218.
3. 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.
4. 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.
5. Azzato, E.M., Driver, K.E., Lesueur, F., Shah, M., Greenberg, D., Easton, D.F., Teschendorff, A.E., Caldas, C., Caporaso, N.E. and Pharoah, P.D. 2008. Effects of common germline genetic variation in cell cycle control genes on breast cancer survival: results from a population-based cohort. *Breast Cancer Res.* 10: R47.
6. Hochstrasser, M. 2009. Origin and function of ubiquitin-like proteins. *Nature* 458: 422-429.

CHROMOSOMAL LOCATION

Genetic locus: USP49 (human) mapping to 6p21.1; Usp49 (mouse) mapping to 17 C.

SOURCE

USP49 (F-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of USP49 of human origin.

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 or our catalog for detailed protocols and support products.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-82409 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

USP49 (F-14) is recommended for detection of USP49 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other USP family members.

USP49 (F-14) is also recommended for detection of USP49 in additional species, including bovine and porcine.

Suitable for use as control antibody for USP49 siRNA (h): sc-76867, USP49 siRNA (m): sc-76868, USP49 shRNA Plasmid (h): sc-76867-SH, USP49 shRNA Plasmid (m): sc-76868-SH, USP49 shRNA (h) Lentiviral Particles: sc-76867-V and USP49 shRNA (m) Lentiviral Particles: sc-76868-V.

Molecular Weight of USP49: 79 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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