

USP4 (H-72): sc-292321

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. USP4 (ubiquitin-specific-processing protease 4), also known as ubiquitin carboxyl-terminal hydrolase 4, UNP or UNPH (ubiquitous nuclear protein homolog), is a 963 amino acid nucleocytoplasmic protein that belongs to the peptidase C19 family. USP4 binds to the C-terminus of Adenosine A_{2A}-R, a G_s-coupled receptor, and enhances cell surface expression of the functionally active receptor. USP4 contains one DUSP domain and exists as two isoforms due to alternative splicing.

REFERENCES

- Frederick, A., Rolfe, M. and Chiu, M.I. 1998. The human UNP locus at 3p21.31 encodes two tissue-selective, cytoplasmic isoforms with deubiquitinating activity that have reduced expression in small cell lung carcinoma cell lines. *Oncogene* 16: 153-165.
- D'Andrea, A. and Pellman, D. 1998. Deubiquitinating enzymes: a new class of biological regulators. *Crit. Rev. Biochem. Mol. Biol.* 33: 337-352.
- DeSalle, L.M., Latres, E., Lin, D., Graner, E., Montagnoli, A., Baker, R.T., Pagano, M. and Loda, M. 2001. The deubiquitinating enzyme Unp interacts with the retinoblastoma protein. *Oncogene* 20: 5538-5542.
- Soboleva, T.A., Jans, D.A., Johnson-Saliba, M. and Baker, R.T. 2005. Nuclear-cytoplasmic shuttling of the oncogenic mouse UNP/USP4 deubiquitylating enzyme. *J. Biol. Chem.* 280: 745-752.
- Wada, K. and Kamitani, T. 2006. UNPEL/USP4 is ubiquitinated by Ro52 and deubiquitinated by itself. *Biochem. Biophys. Res. Commun.* 342: 253-258.
- Toews, M.L. 2006. Adenosine receptors find a new partner and move out. *Mol. Pharmacol.* 69: 1075-1078.
- Milojevic, T., Reiterer, V., Stefan, E., Korkhov, V.M., Dorostkar, M.M., Ducza, E., Ogris, E., Boehm, S., Freissmuth, M. and Nanoff, C. 2006. The ubiquitin-specific protease USP4 regulates the cell surface level of the A_{2A} receptor. *Mol. Pharmacol.* 69: 1083-1094.
- Gsandtner, I. and Freissmuth, M. 2006. A tail of two signals: the C-terminus of the A_{2A}-adenosine receptor recruits alternative signaling pathways. *Mol. Pharmacol.* 70: 447-449.
- Zezula, J. and Freissmuth, M. 2008. The A_{2A}-adenosine receptor: a GPCR with unique features? *Br. J. Pharmacol.* 153: 184-190.

CHROMOSOMAL LOCATION

Genetic locus: USP4 (human) mapping to 3p21.3; Usp4 (mouse) mapping to 9 F2.

SOURCE

USP4 (H-72) is a rabbit polyclonal antibody raised against amino acids 708-779 mapping within an internal region of USP4 of human origin.

PRODUCT

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

APPLICATIONS

USP4 (H-72) is recommended for detection of USP4 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).

USP4 (H-72) is also recommended for detection of USP4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for USP4 siRNA (h): sc-76851, USP4 siRNA (m): sc-76852, USP4 shRNA Plasmid (h): sc-76851-SH, USP4 shRNA Plasmid (m): sc-76852-SH, USP4 shRNA (h) Lentiviral Particles: sc-76851-V and USP4 shRNA (m) Lentiviral Particles: sc-76852-V.

Molecular Weight of USP4: 110 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.


 MONOS
Satisfaction
Guaranteed

Try **USP4 (H-3): sc-376000**, our highly recommended monoclonal alternative to USP4 (H-72).