

# USP4 (Q-19): sc-79322

## 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 A2A-R, a Gs-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

1. Frederick, A., et al. 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.
2. D'Andrea, A. and Pellman, D. 1998. Deubiquitinating enzymes: a new class of biological regulators. *Crit. Rev. Biochem. Mol. Biol.* 33: 337-352.
3. DeSalle, L.M., et al. 2001. The deubiquitinating enzyme Unp interacts with the retinoblastoma protein. *Oncogene* 20: 5538-5542.
4. Soboleva, T.A., et al. 2005. Nuclear-cytoplasmic shuttling of the oncogenic mouse UNP/USP4 deubiquitylating enzyme. *J. Biol. Chem.* 280: 745-752.
5. Wada, K. and Kamitani, T. 2006. UNPEL/USP4 is ubiquitinated by Ro52 and deubiquitinated by itself. *Biochem. Biophys. Res. Commun.* 342: 253-258.
6. Toews, M.L. 2006. Adenosine receptors find a new partner and move out. *Mol. Pharmacol.* 69: 1075-1078.

## CHROMOSOMAL LOCATION

Genetic locus: USP4 (human) mapping to 3p21.31; Usp4 (mouse) mapping to 9 F2.

## SOURCE

USP4 (Q-19) is an affinity purified goat polyclonal antibody raised against a peptide 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.

Blocking peptide available for competition studies, sc-79322 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

USP4 (Q-19) 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 (Q-19) is also recommended for detection of USP4 in additional species, including 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.

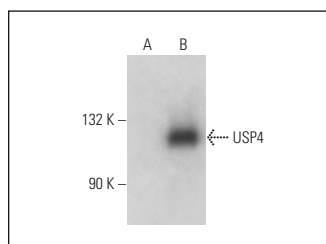
Molecular Weight of USP4: 110 kDa.

Positive Controls: USP4 (m): 293T Lysate: sc-124500.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



USP4 (Q-19): sc-79322. Western blot analysis of USP4 expression in non-transfected: sc-117752 (A) and mouse USP4 transfected: sc-124500 (B) 293T whole cell lysates.

## RESEARCH USE

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

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Try **USP4 (H-3): sc-376000**, our highly recommended monoclonal alternative to USP4 (Q-19).