

USP4 (H-3): sc-376000

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 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.

CHROMOSOMAL LOCATION

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

SOURCE

USP4 (H-3) is a mouse monoclonal antibody raised against amino acids 708-779 mapping within an internal region of USP4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

USP4 (H-3) is available conjugated to agarose (sc-376000 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376000 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376000 PE), fluorescein (sc-376000 FITC), Alexa Fluor® 488 (sc-376000 AF488), Alexa Fluor® 546 (sc-376000 AF546), Alexa Fluor® 594 (sc-376000 AF594) or Alexa Fluor® 647 (sc-376000 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376000 AF680) or Alexa Fluor® 790 (sc-376000 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

USP4 (H-3) is recommended for detection of USP4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 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.

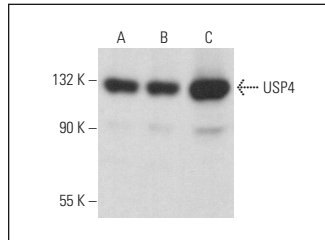
Molecular Weight of USP4: 110 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HEL 92.1.7 cell lysate: sc-2270 or THP-1 cell lysate: sc-2238.

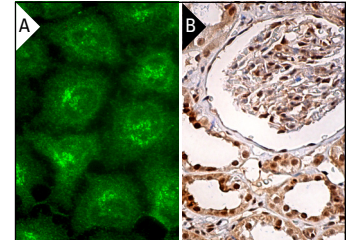
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (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 BPFITC: sc-516140 or m-IgGκ BPE: 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 BPHRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



USP4 (H-3): sc-376000. Western blot analysis of USP4 expression in K-562 (A), HEL 92.1.7 (B) and THP-1 (C) whole cell lysates.



USP4 (H-3): sc-376000. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear and cytoplasmic staining of cells in glomeruli and tubules. (B).

SELECT PRODUCT CITATIONS

- Li, Z., et al. 2016. USP4 inhibits p53 and NFκB through deubiquitinating and stabilizing HDAC2. *Oncogene* 35: 2902-2912.
- Li, T., et al. 2018. Ubiquitin-specific protease 4 promotes hepatocellular carcinoma progression via cyclophilin A stabilization and deubiquitination. *Cell Death Dis.* 9: 148.
- Long, C., et al. 2018. LPS promotes HBO1 stability via USP25 to modulate inflammatory gene transcription in THP-1 cells. *Biochim. Biophys. Acta Gene Regul. Mech.* 1861: 773-782.
- Bai, Y., et al. 2021. Intervention of gastrodin in type 2 diabetes mellitus and its mechanism. *Front. Pharmacol.* 12: 710722.

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 for detailed protocols and support products.