

# USP40 (G-8): sc-514248



The Power to Question

## 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. USP40 (ubiquitin specific peptidase 40), also known as ubiquitin thioesterase 40, deubiquitinating enzyme 40 or ubiquitin carboxyl-terminal hydrolase 40, is a 1,235 amino acid protein that belongs to a large family of cysteine proteases that function as deubiquitinating enzymes. Broadly expressed, USP40 catalyzes the conversion of a ubiquitin C-terminal thioester to a free ubiquitin and a thiol, a reaction that may influence several cellular processes. Existing as two isoforms due to alternative splicing events, USP40 is considered a novel target for late-onset Parkinson disease.

## CHROMOSOMAL LOCATION

Genetic locus: USP40 (human) mapping to 2q37.1; Usp40 (mouse) mapping to 1 D.

## SOURCE

USP40 (G-8) is a mouse monoclonal antibody raised against amino acids 456-654 mapping within an internal region of USP40 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

USP40 (G-8) is available conjugated to agarose (sc-514248 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514248 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514248 PE), fluorescein (sc-514248 FITC), Alexa Fluor® 488 (sc-514248 AF488), Alexa Fluor® 546 (sc-514248 AF546), Alexa Fluor® 594 (sc-514248 AF594) or Alexa Fluor® 647 (sc-514248 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514248 AF680) or Alexa Fluor® 790 (sc-514248 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

USP40 (G-8) is recommended for detection of USP40 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for USP40 siRNA (h): sc-94351, USP40 siRNA (m): sc-154946, USP40 shRNA Plasmid (h): sc-94351-SH, USP40 shRNA Plasmid (m): sc-154946-SH, USP40 shRNA (h) Lentiviral Particles: sc-94351-V and USP40 shRNA (m) Lentiviral Particles: sc-154946-V.

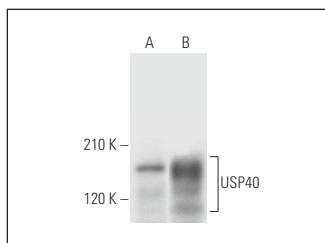
Molecular Weight of USP40: 140 kDa.

Positive Controls: rat testis extract: sc-2400 or human testis extract: sc-363781.

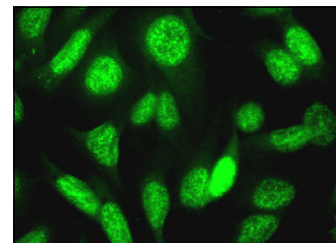
## RECOMMENDED SUPPORT REAGENTS

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



USP40 (G-8): sc-514248. Western blot analysis of USP40 expression in rat testis (A) and human testis (B) tissue extracts.



USP40 (G-8): sc-514248. Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- 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.
- An, W., et al. 2019. Glucocorticoid modulatory element-binding protein 1 (GMEB1) interacts with the de-ubiquitinase USP40 to stabilize CFLARL and inhibit apoptosis in human non-small cell lung cancer cells. *J. Exp. Clin. Cancer Res.* 38: 181.
- Wu, Q., et al. 2024. USP40 promotes hepatocellular carcinoma cell proliferation, migration and stemness by deubiquitinating and stabilizing Claudin1. *Biol. Direct.* 19: 13.
- Zhang, X., et al. 2024. Stress granule-localized USP8 potentiates cGAS-mediated type I interferonopathies through deubiquitination of DDX3X. *Cell Rep.* 43: 114248.

## 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](http://www.scbt.com) for detailed protocols and support products.