

USP40 (G-12): sc-109131

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.

REFERENCES

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2. Southan, C. 2001. A genomic perspective on human proteases. *FEBS Lett.* 498: 214-218.
3. Puente, X.S., et al. 2003. Human and mouse proteases: a comparative genomic approach. *Nat. Rev. Genet.* 4: 544-558.
4. Quesada, V., et al. 2004. Cloning and enzymatic analysis of 22 novel human ubiquitin-specific proteases. *Biochem. Biophys. Res. Commun.* 314: 54-62.
5. Li, Y., et al. 2006. Genetic evidence for ubiquitin-specific proteases USP24 and USP40 as candidate genes for late-onset Parkinson disease. *Hum. Mutat.* 27: 1017-1023.
6. Deng, S., et al. 2007. Overexpression of genes and proteins of ubiquitin specific peptidases (USPs) and proteasome subunits (PSs) in breast cancer tissue observed by the methods of RFDD-PCR and proteomics. *Breast Cancer Res. Treat.* 104: 21-30.
7. Stegmeier, F., et al. 2007. Anaphase initiation is regulated by antagonistic ubiquitination and deubiquitination activities. *Nature* 446: 876-881.

CHROMOSOMAL LOCATION

Genetic locus: USP40 (human) mapping to 2q37.1.

SOURCE

USP40 (G-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of USP40 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-109131 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

USP40 (G-12) is recommended for detection of USP40 of 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.

USP40 (G-12) is also recommended for detection of USP40 in additional species, including equine, canine and porcine.

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

Molecular Weight of USP40: 140 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.