

UBPY (E-1): sc-376130

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. UBPY, also known as USP8 (ubiquitin carboxyl-terminal hydrolase 8) or KIAA0055, is a 1,118 amino acid protein that contains one rhodanese domain and exists in a ternary complex with OTUB1 and GRAIL. Functioning as a hydrolase, UBPY catalyzes the removal of ubiquitin from ubiquitin-conjugated proteins and plays an important role in protein turnover, cellular proliferation and T-cell energy. The gene encoding UBPY maps to human chromosome 15, which houses over 700 genes and comprises nearly 3% of the human genome.

CHROMOSOMAL LOCATION

Genetic locus: USP8 (human) mapping to 15q21.2; Usp8 (mouse) mapping to 2 F1.

SOURCE

UBPY (E-1) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of UBPY of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UBPY (E-1) is available conjugated to agarose (sc-376130 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376130 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376130 PE), fluorescein (sc-376130 FITC), Alexa Fluor® 488 (sc-376130 AF488), Alexa Fluor® 546 (sc-376130 AF546), Alexa Fluor® 594 (sc-376130 AF594) or Alexa Fluor® 647 (sc-376130 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376130 AF680) or Alexa Fluor® 790 (sc-376130 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

UBPY (E-1) is recommended for detection of UBPY 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), 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 UBPY siRNA (h): sc-76795, UBPY siRNA (m): sc-76796, UBPY shRNA Plasmid (h): sc-76795-SH, UBPY shRNA Plasmid (m): sc-76796-SH, UBPY shRNA (h) Lentiviral Particles: sc-76795-V and UBPY shRNA (m) Lentiviral Particles: sc-76796-V.

Molecular Weight (predicted) of UBPY: 128 kDa.

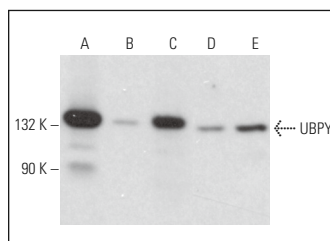
Molecular Weight (observed) of UBPY: 134 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or M1 whole cell lysate: sc-364782.

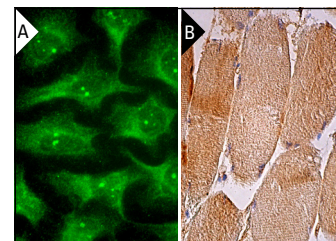
STORAGE

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

DATA



UBPY (E-1): sc-376130. Western blot analysis of UBPY expression in MCF7 (A), WEHI-231 (B), Jurkat (C), M1 (D) and F9 (E) whole cell lysates.



UBPY (E-1): sc-376130. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

SELECT PRODUCT CITATIONS

- Durcan, T.M., et al. 2014. USP8 regulates mitophagy by removing K6-linked ubiquitin conjugates from Parkin. *EMBO J.* 33: 2473-2491.
- Faucz, F.R., et al. 2017. Somatic USP8 gene mutations are a common cause of pediatric Cushing disease. *J. Clin. Endocrinol. Metab.* 102: 2836-2843.
- Zheng, Y., et al. 2018. Zika virus elicits inflammation to evade antiviral response by cleaving cGAS via NS1-caspase-1 axis. *EMBO J.* 37: e99347.
- 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.
- Harris, I.S., et al. 2019. Deubiquitinases maintain protein homeostasis and survival of cancer cells upon glutathione depletion. *Cell Metab.* 29: 1166-1181.e6.
- Chen, Y., et al. 2021. Silencing of METTL3 effectively hinders invasion and metastasis of prostate cancer cells. *Theranostics* 11: 7640-7657.
- Xiong, W., et al. 2022. USP8 inhibition reshapes an inflamed tumor microenvironment that potentiates the immunotherapy. *Nat. Commun.* 13: 1700.
- Zhang, X., et al. 2024. Stress granule-localized USP8 potentiates cGAS-mediated type I interferonopathies through deubiquitination of DDX3X. *Cell Rep.* 43: 114248.
- Miao, Y., et al. 2024. Spatiotemporal recruitment of the ubiquitin-specific protease USP8 directs endosome maturation. *Elife* 13: RP96353.

RESEARCH USE

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

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