

UBPY (A-11): sc-376129

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 anergy. The gene encoding UBPY maps to human chromosome 15, which houses over 700 genes and comprises nearly 3% of the human genome.

REFERENCES

1. Naviglio, S., et al. 1998. UBPY: a growth-regulated human ubiquitin isopeptidase. *EMBO J.* 17: 3241-3250.
2. Kato, M., et al. 2000. A deubiquitinating enzyme UBPY interacts with the Src homology 3 domain of Hrs-binding protein via a novel binding motif PX(V/I)(D/N)RXK. *J. Biol. Chem.* 275: 37481-37487.
3. Gnesutta, N., et al. 2001. Cloning and characterization of mouse UBPY, a deubiquitinating enzyme that interacts with the ras guanine nucleotide exchange factor CDC25^{Mm}/Ras-GRF1. *J. Biol. Chem.* 276: 39448-39454.
4. Berruti, G., et al. 2005. The deubiquitinating enzyme mUBPY interacts with the sperm-specific molecular chaperone MSJ-1: the relation with the proteasome, acrosome, and centrosome in mouse male germ cells. *Biol. Reprod.* 72: 14-21.
5. Row, P.E., et al. 2006. The ubiquitin isopeptidase UBPY regulates endosomal ubiquitin dynamics and is essential for receptor down-regulation. *J. Biol. Chem.* 281: 12618-12624.
6. Avakumov, G.V., et al. 2006. Amino-terminal dimerization, NRDP1-rhodanese interaction, and inhibited catalytic domain conformation of the ubiquitin-specific protease 8 (USP8). *J. Biol. Chem.* 281: 38061-38070.
7. Mizuno, E., et al. 2006. A deubiquitinating enzyme UBPY regulates the level of protein ubiquitination on endosomes. *Traffic* 7: 1017-1031.
8. Alwan, H.A., et al. 2007. UBPY-mediated epidermal growth factor receptor (EGFR) de-ubiquitination promotes EGFR degradation. *J. Biol. Chem.* 282: 1658-1669.

CHROMOSOMAL LOCATION

Genetic locus: USP8 (human) mapping to 15q21.2.

SOURCE

UBPY (A-11) 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_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

UBPY (A-11) is recommended for detection of UBPY of 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).

Suitable for use as control antibody for UBPY siRNA (h): sc-76795, UBPY shRNA Plasmid (h): sc-76795-SH and UBPY shRNA (h) Lentiviral Particles: sc-76795-V.

Molecular Weight (predicted) of UBPY: 128 kDa.

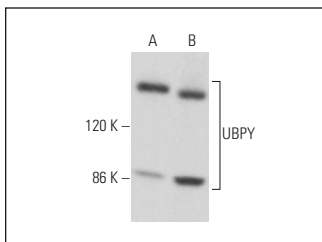
Molecular Weight (observed) of UBPY: 134 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or ZR-75-1 cell lysate: sc-2241.

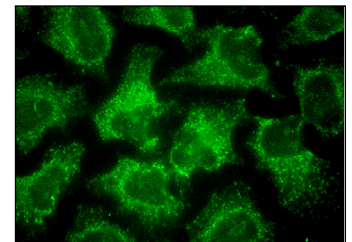
RECOMMENDED SUPPORT REAGENTS

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



UBPY (A-11): sc-376129. Western blot analysis of UBPY expression in MCF7 (A) and ZR-75-1 (B) whole cell lysates.



UBPY (A-11): sc-376129. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Kasahara, K., et al. 2018. EGF receptor kinase suppresses ciliogenesis through activation of USP8 deubiquitinase. *Nat. Commun.* 9: 758.

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.