SANTA CRUZ BIOTECHNOLOGY, INC.

OTUB1 (J-61): sc-130458

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The Power to Question

BACKGROUND

OTUB1 (OTU domain, ubiquitin aldehyde binding 1), also known as OTB1, OTU1, HSPC263 or Otubain-1, is a 271 amino acid protein that contains one OTU (ovarian tumor) domain and belongs to the OTU family of predicted cysteine proteases. Expressed as two isoforms (one of which is present throughout the body and the other of which is present only in lymphoid tissues), OTUB1 functions as a hydrolase that can remove ubiquitin residues from target proteins, thereby preventing protein degradation and playing an important role in protein turnover. OTUB1 interacts with GRAIL and, via this interaction, plays a role in the regulation and the induction of T-cell anergy, a phenomenon that occurs when T-cells are rendered unresponsive to their cognate antigens. Due to its interaction with GRAIL, OTUB1 is an important regulator of immune responses in secondary lymphoid organs.

REFERENCES

1. Borodovsky, A., et al. 2002. Chemistry-based functional proteomics reveals novel members of the deubiquitinating enzyme family. Chem. Biol. 9: 1149-1159.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608337. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Balakirev, M.Y., et al. 2003. Otubains: a new family of cysteine proteases in the ubiquitin pathway. EMBO Rep. 4: 517-522.
4. Soares, L., et al. 2004. Two isoforms of otubain 1 regulate T cell anergy via GRAIL. Nat. Immunol. 5: 45-54.
5. Juris, S.J., et al. 2006. Identification of otubain 1 as a novel substrate for the *Yersinia* protein kinase using chemical genetics and mass spectrometry. FEBS Lett. 580: 179-183.
6. Wang, M., et al. 2008. Comparative analysis of transcriptional profiling of $CD3^+$, $CD4^+$ and $CD8^+$ T cells identifies novel immune response players in T-cell activation. BMC Genomics 9: 225.
7. Shan, T.L., et al. 2009. Partial molecular cloning, characterization, and analysis of the subcellular localization and expression patterns of the porcine OTUB1 gene. Mol. Biol. Rep. 36: 1573-1577.

CHROMOSOMAL LOCATION

Genetic locus: OTUB1 (human) mapping to 11q13.1; Otub1 (mouse) mapping to 19 A.

SOURCE

OTUB1 (J-61) is a mouse monoclonal antibody raised against recombinant OTUB1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

OTUB1 (J-61) is recommended for detection of OTUB1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for OTUB1 siRNA (h): sc-76014, OTUB1 siRNA (m): sc-76015, OTUB1 shRNA Plasmid (h): sc-76014-SH, OTUB1 shRNA Plasmid (m): sc-76015-SH, OTUB1 shRNA (h) Lentiviral Particles: sc-76014-V and OTUB1 shRNA (m) Lentiviral Particles: sc-76015-V.

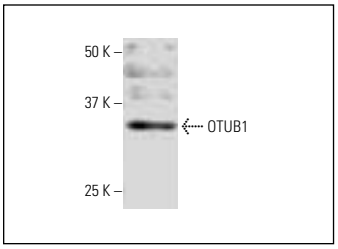
Molecular Weight of OTUB1: 31 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

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).

DATA



OTUB1 (J-61): sc-130458. Western blot analysis of OTUB1 expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

1. Bhuripanyo, K., et al. 2018. Identifying the substrate proteins of U-box E3s E4B and CHIP by orthogonal ubiquitin transfer. Sci. Adv. 4: e1701393.
2. 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.
3. Ling, X., et al. 2022. Ovarian tumorB1-mediated heat shock transcription factor 1 deubiquitination is critical for glycolysis and development of endometriosis. iScience 25: 105363.
4. Zhuge, R., et al. 2023. hCINAP regulates the differentiation of embryonic stem cells by regulating NEDD4 liquid-liquid phase-separation-mediated YAP1 activation. Cell Rep. 42: 111935.

STORAGE

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