SANTA CRUZ BIOTECHNOLOGY, INC.

UBE2D (C-6): sc-166278

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The Power to Question

BACKGROUND

Ubiquitin is an abundant, highly conserved protein found in all eukaryotic cells either free or covalently attached to cellular proteins. The primary function of ubiquitin in mammalian systems is to clear abnormal, foreign and improperly folded proteins by targeting them for proteosome degradation. UBE2D proteins, including UBE2D1 (ubiquitin-conjugating enzyme E2D1 or UBC5A), UBE2D2 (ubiquitin-conjugating enzyme E2D2 or UBC5B) and UBE2D3 (ubiquitin-conjugating enzyme E2D3 or UBC5C) are E2 ubiquitin-conjugating enzymes that catalyze the ubiquitination of IκB-α in a phosphorylation and SCFB-TRCP-dependent manner. Specifically, E1 first transfers a ubiquitin residue to the E2 component (a UBE2D protein) and the UBE2D protein then associates with an E3 ubiquitin-protein ligase, which immediately transfers that residue to a protein that is targeted for degradation. In this fashion, the ubiquitin targets the IκB-α for degradation by a proteasome thus lifting the inhibitory effect of IκB-α on NFκB and allowing NFκB to enter the nucleus.

REFERENCES

1. Ciechanover, A. 1994. The ubiquitin-proteasome proteolytic pathway. Cell 79: 13-21.
2. Ciechanover, A., et al. 1994. The ubiquitin-mediated proteolytic pathway: mechanisms of recognition of the proteolytic substrate and involvement in the degradation of native cellular proteins. FASEB J. 8: 182-191.
3. Hochstrasser, M. 1995. Ubiquitin, proteasomes and the regulation of intracellular protein degradation. Curr. Opin. Cell Biol. 7: 215-223.
4. Liakopoulos, D., et al. 1998. A novel protein modification pathway related to the ubiquitin system. EMBO J. 17: 2208-2214.

SOURCE

UBE2D (C-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 111-143 at the C-terminus of UBE2D of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UBE2D (C-6) is available conjugated to agarose (sc-166278 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166278 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166278 PE), fluorescein (sc-166278 FITC), Alexa Fluor® 488 (sc-166278 AF488), Alexa Fluor® 546 (sc-166278 AF546), Alexa Fluor® 594 (sc-166278 AF594) or Alexa Fluor® 647 (sc-166278 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166278 AF680) or Alexa Fluor® 790 (sc-166278 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166278 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

UBE2D (C-6) is recommended for detection of reactive with all isoforms of UBE2D 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).

UBE2D (C-6) is also recommended for detection of reactive with all isoforms of UBE2D in additional species, including canine, bovine, porcine and avian.

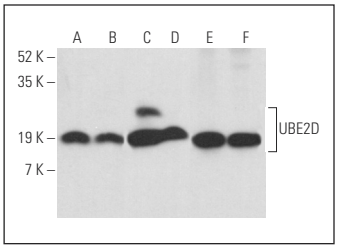
Molecular Weight of UBE2D: 17 kDa.

Positive Controls: F9 cell lysate: sc-2245, A-431 whole cell lysate: sc-2201 or NIH/3T3 whole cell lysate: sc-2210.

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



UBE2D (C-6): sc-166278. Western blot analysis of UBE2D expression in HeLa (**A**), A-431 (**B**), F9 (**C**) and NIH/3T3 (**D**) whole cell lysates and rat testis (**E**) and mouse testis (**F**) tissue extracts.

SELECT PRODUCT CITATIONS

1. McKelvey, A.C., et al. 2016. RING finger E3 ligase PPP1R11 regulates TLR2 signaling and innate immunity. Elife 5 pii: e18496.
2. Keszei, A.F. and Sicheri, F. 2017. Mechanism of catalysis, E2 recognition, and autoinhibition for the IpaH family of bacterial E3 ubiquitin ligases. Proc. Natl. Acad. Sci. USA 114: 1311-1316.
3. Liyasova, M.S., et al. 2019. Cbl interacts with multiple E2s *in vitro* and in cells. PLoS ONE 14: e0216967.

STORAGE

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