SANTA CRUZ BIOTECHNOLOGY, INC.

UBC13 (F-10): sc-376470

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ubiquitination is an important mechanism through which three classes of enzymes act in concert to target short-lived or abnormal proteins for destruction. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). UBC13, also known as UBE2N or BLU, is a 152 amino acid member of the E2 ubiquitin-conjugating enzyme family. Existing as a heterodimer with Mms2 (also known as UBE2V2), UBC13 catalyzes the ATP-dependent synthesis of non-canonical polyubiquitin chains, a process that does not lead to proteasomal degradation. Additionally, UBC13 mediates the transcription of several target genes and is thought to play a role in cell cycle progression, cellular differentiation and DNA repair mechanisms that ensure cell survival after DNA damage.

REFERENCES

1. Yamaguchi, T., et al. 1996. Cloning and expression of cDNA encoding a human ubiquitin-conjugating enzyme similar to the *Drosophila* bendless gene product. J. Biochem. 120: 494-497.
2. Hoege, C., et al. 2002. RAD6-dependent DNA repair is linked to modification of PCNA by ubiquitin and SUMO. Nature 419: 135-141.
3. Andersen, P.L., et al. 2005. Distinct regulation of UBC13 functions by the two ubiquitin-conjugating enzyme variants Mms2 and Uev1A. J. Cell Biol. 170: 745-755.
4. Plans, V., et al. 2006. The RING finger protein RNF8 recruits UBC13 for lysine 63-based self polyubiquitylation. J. Cell. Biochem. 97: 572-582.

CHROMOSOMAL LOCATION

Genetic locus: UBE2N (human) mapping to 12q22; Ube2n (mouse) mapping to 10 C2.

SOURCE

UBC13 (F-10) is a mouse monoclonal antibody raised against amino acids 1-75 mapping at the N-terminus of UBC13 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.

UBC13 (F-10) is available conjugated to agarose (sc-376470 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376470 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376470 PE), fluorescein (sc-376470 FITC), Alexa Fluor® 488 (sc-376470 AF488), Alexa Fluor® 546 (sc-376470 AF546), Alexa Fluor® 594 (sc-376470 AF594) or Alexa Fluor® 647 (sc-376470 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376470 AF680) or Alexa Fluor® 790 (sc-376470 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

UBC13 (F-10) is recommended for detection of UBC13 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), 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).

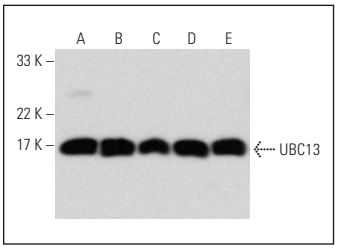
UBC13 (F-10) is also recommended for detection of UBC13 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UBC13 siRNA (h): sc-43551, UBC13 siRNA (m): sc-43553, UBC13 shRNA Plasmid (h): sc-43551-SH, UBC13 shRNA Plasmid (m): sc-43553-SH, UBC13 shRNA (h) Lentiviral Particles: sc-43551-V and UBC13 shRNA (m) Lentiviral Particles: sc-43553-V.

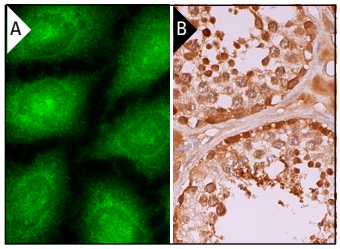
Molecular Weight of UBC13: 17 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, NIH/3T3 whole cell lysate: sc-2210 or C6 whole cell lysate: sc-364373.

DATA



UBC13 (F-10): sc-376470. Western blot analysis of UBC13 expression in BJAB (**A**), CCRF-CEM (**B**), Hep G2 (**C**) and C6 (**D**) and NIH/3T3 (**E**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



UBC13 (F-10): sc-376470. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Zhou, Q., et al. 2016. Loss-of-function mutations in TNFAIP3 leading to A20 haploinsufficiency cause an early-onset autoinflammatory disease. Nat. Genet. 48: 67-73.
2. Meng, Z., et al. 2017. A20 ameliorates intracerebral hemorrhage-induced inflammatory injury by regulating TRAF6 polyubiquitination. J. Immunol. 198: 820-831.
3. Ishtiaq, A., et al. 2020. *Pistacia integerrima* alleviated bisphenol A induced toxicity through UBC13/p53 signalling. Mol. Biol. Rep. 47: 6545-6559.
4. Tirman, S., et al. 2021. Temporally distinct post-replicative repair mechanisms fill PRIMPOL-dependent ssDNA gaps in human cells. Mol. Cell 81: 4026-4040.e8.

STORAGE

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