SANTA CRUZ BIOTECHNOLOGY, INC.

UBE1 (2G2): sc-53555

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The ubiquitin activating enzyme E1 (UBE1) catalyzes the first step in ubiquitin conjugation to mark cellular proteins for degradation. Specifically, UBE1 functions to adenylate the C-terminal glycine residue of ubiquitin, a reaction that is ATP-dependent and is proceeded by the formation of a thiolester bond with a cysteine residue of UBE1. The UBE1-activated ubiquitin is then transferred to a ubiquitin conjugated enzyme, which donates the ubiquitin residue to target substrates. The UBE1 gene is an example of an X-Y homologous gene, which is X-linked with a distinct Y-linked gene in many mammals. However, no UBE1 homolog is detectable on the human Y chromosome. UBE1 is thought to escape X inactivation in humans.

CHROMOSOMAL LOCATION

Genetic locus: UBA1 (human) mapping to Xp11.23; Uba1 (mouse) mapping to X A1.3.

SOURCE

UBE1 (2G2) is a mouse monoclonal antibody raised against UBE1 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.

UBE1 (2G2) is available conjugated to agarose (sc-53555 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53555 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53555 PE), fluorescein (sc-53555 FITC), Alexa Fluor® 488 (sc-53555 AF488), Alexa Fluor® 546 (sc-53555 AF546), Alexa Fluor® 594 (sc-53555 AF594) or Alexa Fluor® 647 (sc-53555 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53555 AF680) or Alexa Fluor® 790 (sc-53555 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

UBE1 (2G2) is recommended for detection of UBE1 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for UBE1 siRNA (h): sc-61750, UBE1 siRNA (m): sc-61751, UBE1 shRNA Plasmid (h): sc-61750-SH, UBE1 shRNA Plasmid (m): sc-61751-SH, UBE1 shRNA (h) Lentiviral Particles: sc-61750-V and UBE1 shRNA (m) Lentiviral Particles: sc-61751-V.

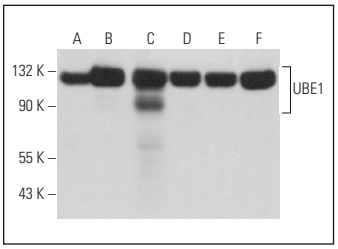
Molecular Weight of UBE1: 110 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

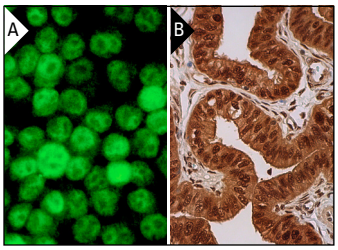
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



UBE1 (2G2): sc-53555. Western blot analysis of UBE1 expression in IMR-32 nuclear extract (**A**) and MCF7 (**B**), HeLa (**C**), K-562 (**D**), U-698-M (**E**) and AN3CA (**F**) whole cell lysates.



UBE1 (2G2): sc-53555. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Baugh, J.M., et al. 2009. Proteasomes can degrade a significant proportion of cellular proteins independent of ubiquitination. J. Mol. Biol. 386: 814-827.
2. Kumbhar, R., et al. 2018. Recruitment of ubiquitin-activating enzyme UBA1 to DNA by poly(ADP-ribose) promotes ATR signalling. Life Sci. Alliance 1: e201800096.
3. Ikeda, M., et al. 2020. UBE1a suppresses herpes simplex virus-1 replication. Viruses 12: 1391.
4. Busonero, C., et al. 2020. Ouabain and digoxin activate the proteasome and the degradation of the ERα in cells modeling primary and metastatic breast cancer. Cancers 12: 3840.
5. Ikeda, M., et al. 2020. Herpes simplex virus 1 infection induces ubiquitination of UBE1a. Biochem. J. E-published.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.