abcam

ab272173

Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR23077-14
Purification technique	Affinity purification Protein A
Concentration	0.991 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human, Mouse
Dilution info	-

Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

I-ELISA

Tested

Species	Recombinant fragment - Human
Dilution info	1 µg/mL
Notes	-

Expected

Species	Human, Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

Species	Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information UBE3A

Function

E3 ubiquitin-protein ligase which accepts ubiquitin from an E2 ubiquitin-conjugating enzyme in the form of a thioester and transfers it to its substrates (PubMed:10373495, PubMed:16772533, PubMed:19204938, PubMed:19233847, PubMed:19325566, PubMed:19591933, PubMed:22645313, PubMed:24273172, PubMed:24728990, PubMed:30020076). Several substrates have been identified including the BMAL1, ARC, LAMTOR1, RAD23A and RAD23B, MCM7 (which is involved in DNA replication), annexin A1, the PML tumor suppressor, and the cell cycle regulator CDKN1B (PubMed:10373495, PubMed:19204938, PubMed:19325566, PubMed:19591933, PubMed:22645313, PubMed:24728990, PubMed:30020076). Additionally, may function as a cellular quality control ubiquitin ligase by helping the degradation of the cytoplasmic misfolded proteins (PubMed:19233847). Finally, UBE3A also promotes its own degradation in vivo. Plays an important role in the regulation of the circadian clock: involved in the ubiquitination of the core clock component BMAL1, leading to its proteasomal degradation (PubMed:24728990). Acts as transcriptional coactivator of progesterone receptor PGR upon progesterone hormone activation (PubMed:16772533). Acts as a regulator of synaptic development by mediating ubiquitination and degradation of ARC (By similarity). Required for synaptic remodeling in neurons by mediating ubiquitination and degradation of LAMTOR1, thereby limiting mTORC1 signaling and activity-dependent synaptic remodeling (By similarity). Synergizes with WBP2 in enhancing PGR activity (PubMed:16772533). (Microbial infection) Catalyzes the high-risk human papilloma virus E6-mediated

ubiquitination of p53/TP53, contributing to the neoplastic progression of cells infected by these viruses.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab272173 is the carrier-free version of ab272168.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	UBE3A also known as ubiquitin protein ligase E3A is an enzyme with a molecular mass of approximately 100 kDa. It plays a central role in the ubiquitination process by adding ubiquitin to specific substrate proteins. UBE3A is found in many tissues but has high expression levels in the brain especially in neurons. The proper function of UBE3A requires its interaction with the ubiquitin-conjugating enzyme E2 marking target proteins for proteasomal degradation or other cellular processes.
Biological function summary	The role of UBE3A is connected to protein homeostasis and turnover. It is part of the ubiquitin-proteasome system which regulates the degradation of damaged or unneeded proteins. UBE3A does not work alone; it functions as part of a larger E3 ligase complex. This complex selectively identifies and modifies proteins determining their fate within the cell. The precision of UBE3A in these processes is necessary for normal neural development and synaptic plasticity.
Pathways	UBE3A is involved in the synaptic transmission and neuronal signaling pathways. It interacts with proteins such as HERC2 and RAD18 which are involved in DNA damage response and repair. UBE3A's involvement in these pathways highlights its importance in maintaining neuronal health. This protein’s activity influences downstream signaling events affecting processes like synaptic function and neuronal communication.
Associated diseases and disorders	Disruptions in UBE3A activity link to Angelman syndrome and autism spectrum disorders. Angelman syndrome results from the loss of function of the maternal UBE3A gene leading to severe neurological impairments. UBE3A's relationship with proteins like MECP2 involved in gene regulation suggests a broader role in neurodevelopmental disorders. Research continues to explore how UBE3A and its interaction partners contribute to the underlying mechanisms of these diseases.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

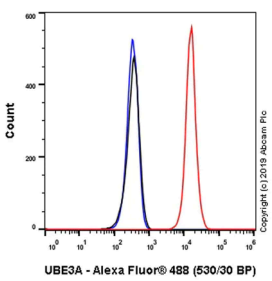
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

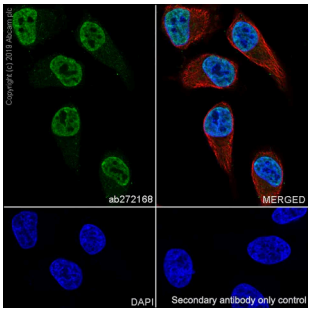
7 product images



Flow Cytometry (Intracellular) - Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free (ab272173)

UBE3A Flow Cytometry (Intracellular) staining using rabbit Anti-UBE3A antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol-permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling UBE3A with ab272168 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab272168).

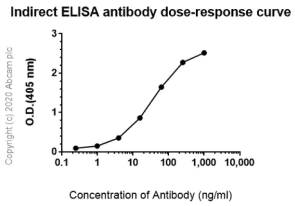


Immunocytochemistry/ Immunofluorescence - Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free (ab272173)

UBE3A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-UBE3A antibody

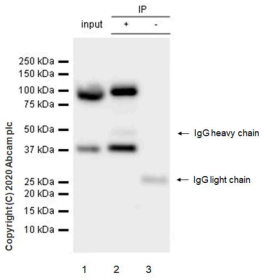
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa cells labelling UBE3A with ab272168 at 1/100 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing nuclear and weak cytoplasmic staining in HeLa cell line ab195889. Anti-alpha Tubulin antibody (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab272168).



Indirect ELISA - Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free (ab272173)

indirect ELISA using ab272168 at varying antibody concentrations (1000-0 ng/ml) and Human UBE3A antigen at 1000 ng/ml. Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) at 1/2500 dilution was used as a secondary antibody.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab272168).



Immunoprecipitation - Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free (ab272173)

UBE3A was immunoprecipitated from 0.35 mg K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate with ab272168 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab272168 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate 10 ug

Lane 2: ab272168 IP in K-562 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab272168 in K-562 whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 15 seconds

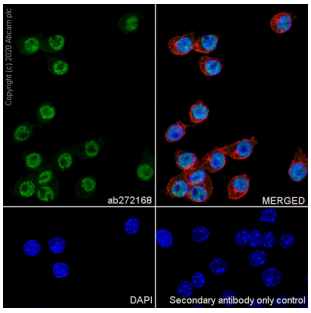
A 37 kDa degraded band is observed.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab272168).

All lanes:
Immunoprecipitation - Anti-UBE3A antibody [EPR23077-14] (ab272168)

Predicted band size: 100 kDa

Observed band size: 100 kDa, 37 kDa

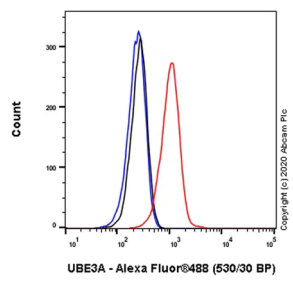


Immunocytochemistry/ Immunofluorescence - Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free (ab272173)

UBE3A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-UBE3A antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized RAW 264.7 cells labelling UBE3A with ab272168 at 1/100 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing nuclear and weak cytoplasmic staining in RAW 264.7 cell line. ab195889 Anti-alpha Tubulin antibody (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab272168).

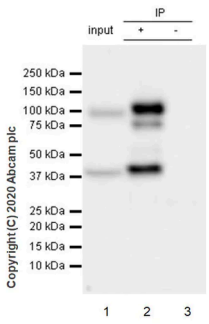


Flow Cytometry (Intracellular) - Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free (ab272173)

UBE3A Flow Cytometry (Intracellular) staining using rabbit Anti-UBE3A antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol-permeabilized RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) cells labelling UBE3A with ab272168 at 1/50 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody

and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab272168).



Immunoprecipitation - Anti-UBE3A antibody [EPR23077-14] - BSA and Azide free (ab272173)

UBE3A was immunoprecipitated from 0.35 mg RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) (treated with 10 µM MG-132 for 4 hours) whole cell lysate with ab272168 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab272168 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) treated with 10 µM MG-132 for 4 hours, whole cell lysate 10 ug

Lane 2: ab272168 IP in RAW 264.7 treated with 10 µM MG-132 for 4 hours, whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab272168 in RAW 264.7 treated with 10 µM MG-132 for 4 hours, whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 10 seconds

A 37 kDa degraded band is observed.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab272168).

All lanes:
Immunoprecipitation - Anti-UBE3A antibody [EPR23077-14] (ab272168)

Predicted band size: 100 kDa

Observed band size: 100 kDa, 37 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.