abcam

ab181537

Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR17034
Purification technique	Affinity purification Protein A
Concentration	0.903 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Rat
Dilution info	1/5000
Notes	Actual Band: 14kDa and above.

Species	Mouse
Dilution info	1/5000
Notes	Actual Band: 14kDa and above.

Species	Human
Dilution info	1/5000
Notes	Actual Band: 14kDa and above.

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/160
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Rat
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Target data

See full target information UBC Linkage-specific K27

Function

Ubiquitin. Exists either covalently attached to another protein, or free (unanchored). When covalently bound, it is conjugated to target proteins via an isopeptide bond either as a monomer (monoubiquitin), a polymer linked via different Lys residues of the ubiquitin (polyubiquitin chains) or a linear polymer linked via the initiator Met of the ubiquitin (linear polyubiquitin chains). Polyubiquitin chains, when attached to a target protein, have different functions depending on the Lys residue of the ubiquitin that is linked: Lys-6-linked may be involved in DNA repair; Lys-11-linked is involved in ERAD (endoplasmic reticulum-associated degradation) and in cell-cycle regulation; Lys-29-linked is involved in proteotoxic stress response and cell cycle; Lys-33-linked is involved in kinase modification; Lys-48-linked is involved in protein degradation via the proteasome; Lys-63-linked is involved in endocytosis, DNA-damage responses as well as in signaling processes leading to activation of the transcription factor NF-kappa-B. Linear polymer chains formed via attachment by the initiator Met lead to cell signaling. Ubiquitin is usually conjugated to Lys residues of target proteins, however, in rare cases, conjugation to Cys or Ser residues has been observed. When polyubiquitin is free (unanchored-polyubiquitin), it also has distinct roles, such as in activation of protein kinases, and in signaling. During ubiquitination, the acceptor ubiquitin is positioned in the active site via direct interaction with the E2 ubiquitin-conjugating enzymes such as UBE2R2 (PubMed:38326650). As a monoubiquitin, its C-terminal glycine is recognized as a C-degron by Cul2-RING (CRL2) E3 ubiquitin-protein ligase complexes (PubMed:39548056).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

Supplementary info

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

Activity summary	Ubiquitin is a small regulatory protein found in almost all tissues of eukaryotic organisms. It has a molecular weight of approximately 8.6 kilodaltons. It functions mechanically by attaching to proteins through a process called ubiquitination which involves the formation of an isopeptide bond. Ubiquitin molecules can form polyubiquitin chains through different lysine residues such as K48 and K63 that determine their function. These chains label substrate proteins for various fates including degradation. Ubiquitin is expressed ubiquitously in cells reflecting its essential role in maintaining protein homeostasis.
Biological function summary	The ubiquitin system plays a critical role in regulating protein turnover and quality control within cells. It is part of a larger complex known as the ubiquitin-proteasome system (UPS) which is responsible for degrading proteins that need to be turned over. This process is essential for cell cycle control response to oxidative stress and DNA repair. Ubiquitin's role in tagging proteins for degradation or

	signaling allows cells to respond quickly to changes in their environment and maintain balance.
Pathways	Ubiquitin functions in several important biological pathways including the Wnt and NF-kB pathways. In the Wnt signaling pathway ubiquitination modulates the stability of key components thereby affecting the pathway's overall activity. In the NF-kB signaling pathway ubiquitin labels inhibitor proteins for degradation which releases and activates NF-kB. These pathways highlight ubiquitin's interaction with proteins such as beta-catenin in Wnt and IkB in NF-kB illustrating how it regulates diverse cellular processes.
Associated diseases and disorders	The dysfunction of the ubiquitin system is linked to neurodegenerative diseases and cancers. Ubiquitin-related defects in protein degradation can lead to the buildup of unwanted proteins contributing to conditions like Parkinson's disease. Connections with cancer are evident as ubiquitin controls cell cycle proteins and aberrant ubiquitination may drive tumor growth and progression. The protein p53 known to be controlled by ubiquitination plays a significant role in cancer related mechanisms when dysregulated. Understanding and targeting ubiquitin-related pathways may provide new therapeutic opportunities for treating these conditions.

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

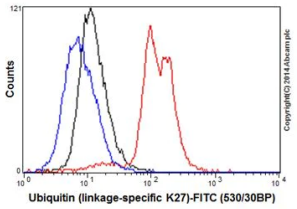
We do not recommend this combination. It is not covered by our product promise.

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.

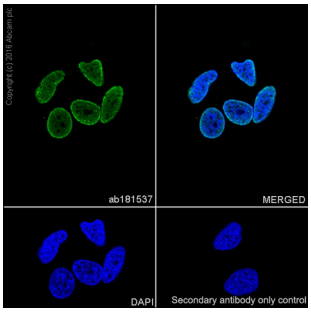
9 product images



Flow Cytometry (Intracellular) - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Ubiquitin (linkage-specific K27) Flow Cytometry (Intracellular) staining using rabbit Anti-Ubiquitin (linkage-specific K27) antibody

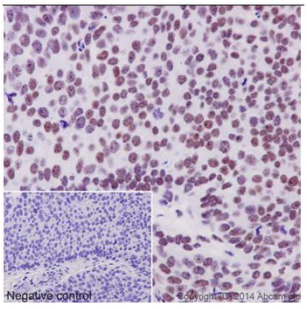
Intracellular flow cytometric analysis of2% paraformaldehyde-fixedJurkat (Human T cell leukemia cells from peripheral blood) cells labeling Ubiquitin (linkage-specific K27) with ab181537 at 1/160 dilution (red). The secondary antibody wasGoat anti rabbit IgG (FITC) at 1/150 dilution. The isotype control isRabbit monoclonal IgG (black) and cell without incubation with primary antibody and secondary antibody is blue.



Immunocytochemistry/ Immunofluorescence - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Ubiquitin (linkage-specific K27) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Ubiquitin (linkage-specific K27) antibody

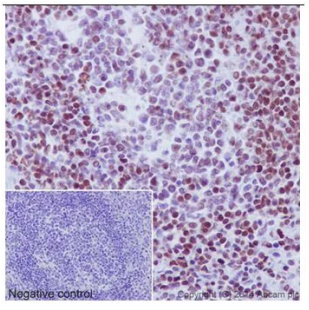
Immunocytochemistry/Immunofluorescence analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma)
labelling Ubiquitin (linkage-specific K27) with purified ab181537 at 1/1000. Cells were fixed with 4% PFA and permeabilized with 0.1% triton X-100. ab150077 Goat anti rabbit IgG (Alexa Fluor® 488) at 1/1000 was used as the secondary antibody. Nuclei were counterstained with DAPI. PBS was used instead of the primary antibody as the negative control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Ubiquitin (linkage-specific K27) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ubiquitin (linkage-specific K27) antibody

Immunohistochemical analysis of paraffin-embedded Human transitional cell carcinoma of bladder labeling Ubiquitin (linkage-specific K27) with ab181537 at 1/500 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear staining on cancer cells of Human bladder transitional cell carcinoma is observed. Counter stained with Hematoxylin.
Negative control: Used PBS instead of primary antibody.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

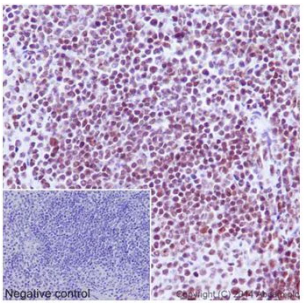


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Ubiquitin (linkage-specific K27) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ubiquitin (linkage-specific K27) antibody

Immunohistochemical analysis of paraffin-embedded Rat spleen tissue labeling Ubiquitin (linkage-specific K27) with ab181537 at 1/500 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear staining on lymphocytes of Rat spleen is observed. Counter

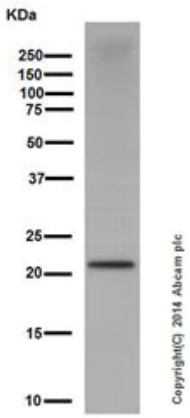
stained with Hematoxylin.
Negative control: Used PBS instead of primary antibody.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Ubiquitin (linkage-specific K27) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ubiquitin (linkage-specific K27) antibody

Immunohistochemical analysis of paraffin-embedded Mouse spleen tissue labeling Ubiquitin (linkage-specific K27) with ab181537 at 1/500 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nuclear staining on lymphocytes of Mouse spleen is observed.
Counter stained with Hematoxylin.
Negative control: Used PBS instead of primary antibody.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Ubiquitin (linkage-specific K27) Western blot staining of HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysates using rabbit Anti-Ubiquitin (linkage-specific K27) antibody

Blocking/dilution buffer: 5% BSA/TBST.
All lanes:
Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537) at 1/5000 dilution

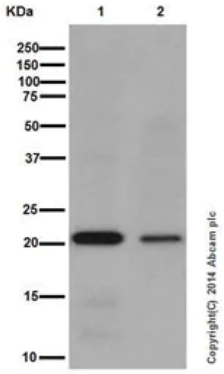
All lanes:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysates at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 26 kDa

Observed band size: 26 kDa



Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Ubiquitin (linkage-specific K27) Western blot staining using rabbit Anti-Ubiquitin (linkage-specific K27) antibody

Blocking/Dilution buffer: 5% BSA/TBST.
All lanes:
Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537) at 1/50000 dilution

Lane 1:
293T (Human epithelial cells from embryonic kidney) whole cell lysates at 10 µg

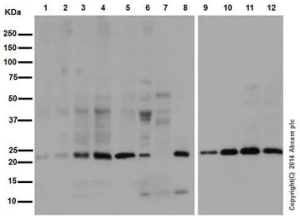
Lane 2:
Jurkat (Human T cell leukemia cells from peripheral blood) whole cell lysates at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 26 kDa

Observed band size: 26 kDa



Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Blocking/dilution buffer: 5% BSA/TBST.
All lanes:
Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537) at 1/5000 dilution

Lane 1:
Mouse brain lysates at 10 µg

Lane 2:
Mouse heart lysates at 10 µg

Lane 3:
Mouse kidney lysates at 10 µg

Lane 4:
Mouse spleen lysates at 10 µg

Lane 5:
Rat brain lysates at 10 µg

Lane 6:
Rat heart lysates at 10 µg

Lane 7:
Rat kidney lysates at 10 µg

Lane 8:
Rat spleen lysates at 10 µg

Lane 9:
C6 (Rat glial tumor cells) whole cell lysates at 10 µg

Lane 10:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysates at 10 µg

Lane 11:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysates at 10 µg

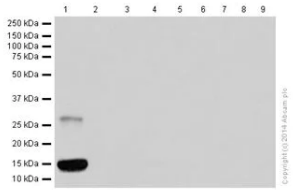
Lane 12:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysates at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 26 kDa

Observed band size: 26 kDa, 14 kDa



Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537)

Blocking/dilution buffer: 5% BSA/TBST.
Expected MW is ~17kDa (8.5*2)

The ~30kDa band may be the dimer of K27-linked-Ub2 recombinant protein.

All lanes:
Western blot - Anti-Ubiquitin (linkage-specific K27) antibody [EPR17034] (ab181537) at 1/5000 dilution

Lane 1:
K27-linked-Ub2 recombinant protein at 0.02 µg

Lane 2:
K6-linked-Ub2 recombinant protein at 0.02 µg

Lane 3:
K11-linked-Ub2 recombinant protein at 0.02 µg

Lane 4:
K29-linked-Ub2 recombinant protein at 0.02 µg

Lane 5:
K33-linked-Ub2 recombinant protein at 0.02 µg

Lane 6:
K48-linked-Ub2 recombinant protein at 0.02 µg

Lane 7:
K63-linked-Ub2 recombinant protein at 0.02 µg

Lane 8:
Ubiquitin recombinant protein at 0.02 µg

Lane 9:
Ubiquitin linear recombinant protein at 0.02 µg

Secondary

All lanes:

Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 26 kDa

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