abcam

ab305259

Anti-Clathrin heavy chain antibody [EPR24236-222]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	EPR24236-222
Purification technique	Affinity purification Protein A
Specificity	The antibody detects both heavy chain 1 and 2.
Concentration	0.55 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information CLTC

Function	Clathrin is the major protein of the polyhedral coat of coated pits and vesicles. Two different adapter protein complexes link the clathrin lattice either to the plasma membrane or to the trans-Golgi network. Acts as a component of the TACC3/ch-TOG/clathrin complex proposed to contribute to stabilization of kinetochore fibers of the mitotic spindle by acting as inter-microtubule bridge (PubMed:15858577, PubMed:16968737, PubMed:21297582). The TACC3/ch-TOG/clathrin complex is required for the maintenance of kinetochore fiber tension (PubMed:23532825). Plays a role in early autophagosome formation (PubMed:20639872). Interaction with DNAJC6 mediates the recruitment of HSPA8 to the clathrin lattice and creates local destabilization of the lattice promoting uncoating (By similarity).

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	The Clathrin heavy chain also known as clathrin heavy chain 1 or heavy chain kDa is a fundamental component of the clathrin protein complex with a molecular weight commonly around 180 kDa. This chain-like protein mechanically assembles into a triskelion shape consisting of three heavy chains and three light chains allowing it to form a lattice structure that coats vesicles. Clathrin heavy chain is expressed widely especially in cells with high endocytic and vesicle transport activity like neuronal and epithelial cells. It plays a pivotal role in cellular trafficking by driving the formation of clathrin-coated pits and vesicles.
Biological function summary	Functions of the clathrin heavy chain include mediating the endocytosis of receptors and other membrane proteins contributing to intracellular sorting and vesicle trafficking. It is a part of the clathrin triskelion complex which is essential for maintaining proper cellular homeostasis. The clathrin lattice structure dynamically assembles and disassembles to facilitate the transport of molecules from the plasma membrane to the endosomes influencing endocytic and post-Golgi network trafficking processes. This protein's ability to form complexes enables efficient cargo selection and vesicle scission.
Pathways	Clathrin-mediated endocytosis serves as a critical pathway for internalizing substances and is fundamental in the regulation of signal transduction pathways

	and receptor recycling. The clathrin heavy chain interacts closely with proteins such as adaptins and dynamin in these pathways to ensure accurate vesicle budding and trafficking. In synaptic vesicle recycling clathrin collaborates with proteins like synaptotagmins to manage neurotransmitter release maintaining synaptic transmission and neuronal function.
Associated diseases and disorders	Disruptions in clathrin heavy chain function can lead to conditions such as neurodegenerative diseases and cancer. For instance alterations in clathrin-mediated endocytosis can affect receptor trafficking and signaling contributing to Alzheimer's disease. Similarly aberrant clathrin function can influence cell cycle control and apoptosis pathways involved in cancer progression. In cancer the regulation of the epidermal growth factor receptor (EGFR) by clathrin-dependent endocytosis highlights the complex interplay between clathrin and oncogenic signaling pathways.

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

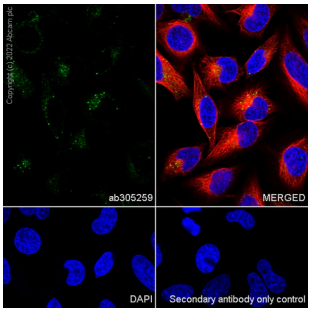
We do not recommend this combination. It is not covered by our product promise.

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.

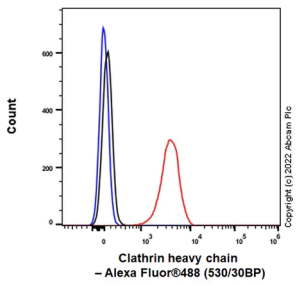
Full details and terms and conditions can be found here:
Terms & Conditions.

4 product images



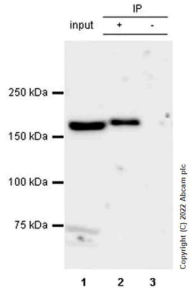
Immunocytochemistry/ Immunofluorescence - Anti-Clathrin heavy chain antibody [EPR24236-222] (ab305259)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling Clathrin heavy chain with ab305259 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing punctuated cytoplasmic staining in HeLa cell line. The image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (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 ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-Clathrin heavy chain antibody [EPR24236-222] (ab305259)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling Clathrin heavy chain with ab305259 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, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-Clathrin heavy chain antibody [EPR24236-222] (ab305259)

Clathrin heavy chain was immunoprecipitated from 0.35 mg HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10 µg with ab305259 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab305259. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10 µg Lane 2: ab305259 IP in HeLa whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab305259 in HeLa whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 50 seconds
All lanes:
Immunoprecipitation - Anti-Clathrin heavy chain antibody [EPR24236-222] (ab305259) at 1/30 dilution

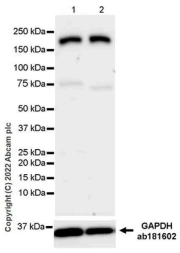
All lanes:
HeLa (human cervix adenocarcinoma epithelial cell)

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Observed band size: 180 kDa

Exposure time: 50s



Western blot - Anti-Clathrin heavy chain antibody [EPR24236-222] (ab305259)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Exposure time: 37 seconds
All lanes:
Western blot - Anti-Clathrin heavy chain antibody [EPR24236-222] (ab305259) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/2000 dilution

Observed band size: 180 kDa

Exposure time: 37s

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