abcam

ab236067

Anti-M6PR (cation dependent) antibody [EPR7691] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR7691
Purification technique	Affinity purification Protein A
Dissociation constant	6.3×10^{-11} M
Concentration	1.05 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse, Rat

Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information M6PR

Function Transport of phosphorylated lysosomal enzymes from the Golgi complex and the cell surface to lysosomes. Lysosomal enzymes bearing phosphomannosyl residues bind specifically to mannose-6-phosphate receptors in the Golgi apparatus and the

resulting receptor-ligand complex is transported to an acidic prelyosomal compartment where the low pH mediates the dissociation of the complex.

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

ab236067 is the carrier-free version of ab134153.

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	M6PR or mannose-6-phosphate receptor (cation dependent) is a protein involved in the transport of lysosomal enzymes from the Golgi apparatus to the lysosome. Alternate names for M6PR include CD-MPR and MPR46 reflecting its function and molecular weight of approximately 46 kDa. M6PR is expressed in various tissues but primarily found in the Golgi apparatus where it engages with lysosomal enzymes. This receptor is an important element in the delivery system that ensures lysosomal enzymes reach their intended cellular destination.
Biological function summary	M6PR acts as a sorting receptor by binding mannose-6-phosphate-tagged enzymes in the Golgi. It is involved in a complex trafficking mechanism that involves clathrin-coated vesicles. The receptor recognizes and binds to its ligands in the Golgi directing them to endosomes and eventually fusing with lysosomes. M6PR plays a critical role in maintaining lysosome functionality by regulating enzyme availability which is essential for cellular waste degradation and resource recycling.
Pathways	The protein M6PR participates in the lysosomal enzyme targeting pathway that ensures proper enzyme sorting and delivery within cells. This pathway overlaps with the Golgi-to-endosome transport vesicle biogenesis involving proteins like clathrin and adaptin. M6PR interacts with proteins in the sorting pathway such as GGA adaptors and Hsc70 which assist in the recognition and transport processes necessary for lysosome integrity and function.
Associated diseases and disorders	The malfunction of M6PR links to disorders like I-cell disease and mucolipidosis II characterized by defective lysosomal enzyme targeting. Impaired M6PR function can lead to the accumulation of undigested substrates within the lysosome causing cellular dysfunction. The receptor's failure can also indirectly affect protein interactions in diseases like mucolipidosis where relationships with proteins such as IGF2R can get altered further influencing cellular pathways and leading to various pathological 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

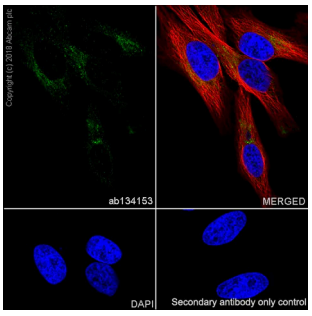
We do not recommend this combination. It is not covered by our product promise.

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.

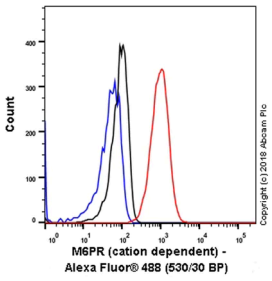
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-M6PR (cation dependent) antibody [EPR7691] - BSA and Azide free (ab236067)

M6PR (cation dependent) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-M6PR (cation dependent) antibody

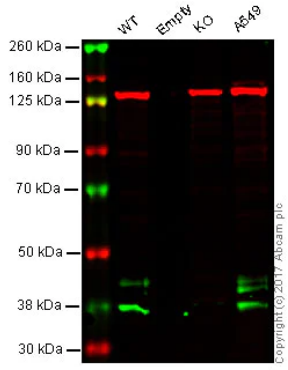
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling M6PR (cation dependent) with Purified ab134153 at 1:100 dilution (8.6 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor®594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor®488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134153).



Flow Cytometry (Intracellular) - Anti-M6PR (cation dependent) antibody [EPR7691] - BSA and Azide free (ab236067)

M6PR (cation dependent) Flow Cytometry (Intracellular) staining using rabbit Anti-M6PR (cation dependent) antibody

Intracellular Flow Cytometry analysis of A549 (Human lung carcinoma epithelial cell) cells labeling M6PR (cation dependent) with purified ab134153 at 1/80 dilution (10 µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134153).



Western blot - Anti-M6PR (cation dependent) antibody [EPR7691] - BSA and Azide free (ab236067)

M6PR (cation dependent) Western blot staining using rabbit Anti-M6PR (cation dependent) antibody

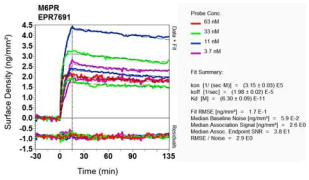
Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: Empty
Lane 3: M6PR knockout HAP1 whole cell lysate (20 µg)
Lane 4: A549 whole cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab134153 observed at 46 kDa. Red - loading control, ab18058, observed at 130 kDa.

ab134153 was shown to specifically react with M6PR when M6PR knockout samples were used. Wild-type and M6PR knockout samples were subjected to SDS-PAGE. ab134153 and ab18058 (Mouse anti-Vinculin loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/10000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134153).
All lanes:
Western blot - Anti-M6PR (cation dependent) antibody [EPR7691] (ab134153)

Predicted band size: 31 kDa

Observed band size: 46 kDa



OI-RD Scanning - Anti-M6PR (cation dependent) antibody [EPR7691] - BSA and Azide free (ab236067)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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