abcam

ab2733

Anti-M6PR (cation independent) antibody [2G11]

KO Validated

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	2G11
Purification technique	Affinity purification
Epitope	This antibody is shown to recognize an epitope in the extracellular domain of Mannose 6 Phosphate Receptor.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells

Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Hamster
Dilution info	-
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	-
Notes	-

Species	Cow
Dilution info	-
Notes	-

Species	Primates
Dilution info	-
Notes	-

Species	African green monkey
Dilution info	-
Notes	-

WB

Not recommended

Species	Hamster
Dilution info	-
Notes	Abcam recommends using BSA as the blocking agent.

Species	Human
Dilution info	-
Notes	Abcam recommends using BSA as the blocking agent.

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	-
Notes	-

Species	Cow
Dilution info	-
Notes	-

Species	Primates
Dilution info	-
Notes	-

Species	African green monkey
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1-10 µg/mL
Notes	-

Not recommended

Species	Hamster, Mouse, Rat, Cow, Primates, African green monkey
Dilution info	-

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 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

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

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

Activity summary	The cation-independent mannose 6-phosphate receptor (M6PR) is an important player in cellular transport mechanisms. Also known as the insulin-like growth factor 2 receptor (IGF2R) this protein weighs approximately 300 kDa. M6PR is present on the membrane of lysosomes and works as a lysosome membrane marker. It functions as a sorting receptor in the Golgi apparatus and endosomes

	facilitating the transport of lysosomal enzymes from the Golgi to lysosomes and back for function and degradation.
Biological function summary	The M6PR enables essential cellular processes by mediating the trafficking of enzymes important to lysosomal function. This receptor takes part in recognizing and binding proteins tagged with mannose 6-phosphate signals allowing their transport to lysosomes. IGF2R engages in forming transient complexes with these enzymes within the cellular trafficking circuitry therefore ensuring the proper delivery of enzyme cargo to its target destination.
Pathways	M6PR fits importantly within lysosomal enzyme transport and the insulin-like growth factor (IGF) pathway. It partially regulates the homeostasis of IGF2 by facilitating its degradation modulating cell proliferation growth and development. Steric interactions with IGF2 and other proteins like mannose receptor homologs and IGF-binding proteins outline its influence within these pathways highlighting its multifunctionality.
Associated diseases and disorders	M6PR connects to certain cancers and lysosomal storage disorders. Dysfunctional pathway interactions or mutations within IGF2R often relate with types of cancer such as breast and liver cancers due to its influence on IGF2 regulation and cell proliferation. Additionally it associates with lysosomal storage diseases as lysosome-related pathologies emerge from impaired enzyme transport reflecting the M6PR's intricate role in cellular homeostasis.

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

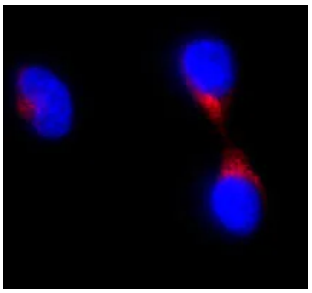
We do not recommend this combination. It is not covered by our product promise.

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.

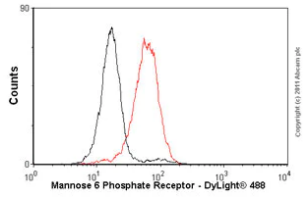
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-M6PR (cation independent) antibody [2G11] (ab2733)

M6PR (cation independent) Immunocytochemistry/ Immunofluorescence staining using mouse Anti-M6PR (cation independent) antibody

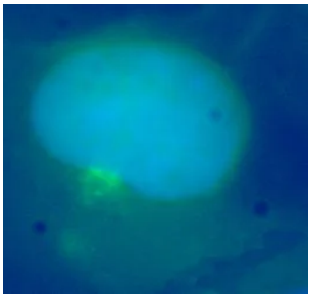
ab2733 positively staining formaldehyde fixed Human HEK 293 cells (red) in conjunction with goat anti mouse (Alexa 546). Nuclear staining was obtained using Hoechst.
This image is an edited version of an image received courtesy of an Abreview submitted by **Kun Liu on 19 September 2005**. We do not have any further information relating to this image.



Flow Cytometry (Intracellular) - Anti-M6PR (cation independent) antibody [2G11] (ab2733)

M6PR (cation independent) Flow Cytometry (Intracellular) staining using mouse Anti-M6PR (cation independent) antibody

Overlay histogram showing HeLa cells stained with ab2733 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab2733, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



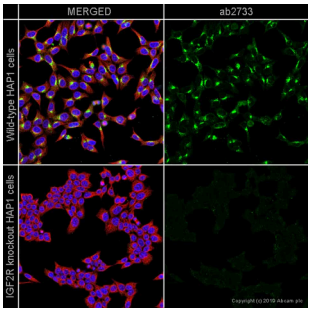
Luke Hughes-Davies and Rhiannon Jade, Gurdon Institute, Cambridge, UK

Immunocytochemistry/ Immunofluorescence - Anti-M6PR (cation independent) antibody [2G11] (ab2733)

M6PR (cation independent) Immunocytochemistry/ Immunofluorescence staining using mouse Anti-M6PR (cation independent) antibody

Immunofluorescent imaging of human cells (U2OS) with ab2733 confirms the specificity of this antibody, with the expected perinuclear vesicular staining of lysosomes.

IF was performed with a standard paraformaldehyde technique (fixed in PBS buffered PFH 4% for 5 minutes, permeabilised with 0.5% triton-PBS for 5 minutes, blocked with 5% milk / 0.2% tween for one hour. Primary antibody used at 1/100 in 5% milk / 0.2% TWEEN for one hour, secondary antibody for 30 minutes. All blocking and incubation steps carried out at 37 degrees.

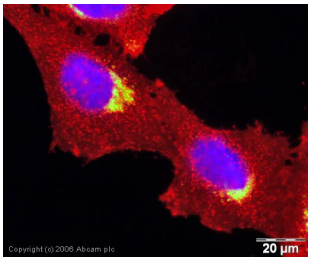


Immunocytochemistry/ Immunofluorescence - Anti-M6PR (cation independent) antibody [2G11] (ab2733)

M6PR (cation independent) Immunocytochemistry/ Immunofluorescence staining using mouse Anti-M6PR (cation independent) antibody

ab2733 staining IGF2R in wild-type HAP1 cells (top panel) and IGF2R knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween

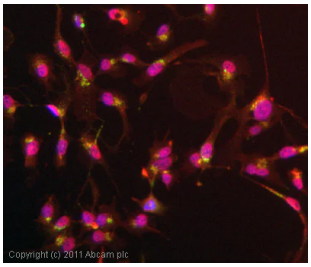
for 1h. The cells were then incubated with ab2733 at 1ug/ml and ab6046 (Tubulin) at 1/1000 dilution overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (ab150080) at 2 µg/ml (shown in pseudo color red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunocytochemistry/ Immunofluorescence - Anti-M6PR (cation independent) antibody [2G11] (ab2733)

M6PR (cation independent) Immunocytochemistry/ Immunofluorescence staining using mouse Anti-M6PR (cation independent) antibody

ICC/IF image of ab2733 stained human HeLa cells. The cells were methanol fixed (5 min) and incubated with the antibody (ab2733, 1µg/ml) for 1h at room temperature. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Image-iT™ FX Signal Enhancer was used as the primary blocking agent, 5% BSA (in TBS-T) was used for all other blocking steps. DAPI was used to stain the cell nuclei (blue). Alexa Fluor® 594 WGA was used to label plasma membranes (red).



Immunocytochemistry/ Immunofluorescence - Anti-M6PR (cation independent) antibody [2G11] (ab2733)

M6PR (cation independent) Immunocytochemistry/ Immunofluorescence staining using mouse Anti-M6PR (cation independent) antibody

ICC/IF image of ab2733 stained HepG2 cells. The cells were 4% PFA fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab2733, 10µg/ml) overnight at +4°C. The secondary antibody (green) was DyLight® 488 goat anti-mouse IgG - H&L, pre-adsorbed (ab96879) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

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