abcam

ab221498

Anti-Glypican 3 antibody [EPR10641] - 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	EPR10641
Purification technique	Affinity purification Protein A
Concentration	1.057 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information GPC3

Function	Cell surface proteoglycan (PubMed:14610063). Negatively regulates the hedgehog signaling pathway when attached via the GPI-anchor to the cell surface by competing with the hedgehog receptor PTC1 for binding to hedgehog proteins (By similarity). Binding to the hedgehog protein SHH triggers internalization of the complex by endocytosis and its subsequent lysosomal degradation (By similarity). Positively regulates the canonical Wnt signaling pathway by binding to the Wnt receptor Frizzled and stimulating the binding of the Frizzled receptor to Wnt ligands (PubMed:16227623, PubMed:24496449). Positively regulates the non-canonical Wnt signaling pathway (By similarity). Binds to CD81 which decreases the availability of free CD81 for binding to the transcriptional repressor HHEX, resulting in nuclear translocation of HHEX and transcriptional repression (By similarity). Inhibits the dipeptidyl peptidase activity of DPP4 (PubMed:17549790). Plays a role in limb patterning and skeletal development by controlling the cellular response to BMP4 (By similarity). Modulates the effects of growth factors BMP2, BMP7 and FGF7 on renal branching morphogenesis (By similarity). Required for coronary vascular development (By similarity). Plays a role in regulating cell movements during gastrulation (By similarity).

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

ab221498 is the carrier-free version of ab174851.

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	Glypican 3 also known as GPC3 is a cell surface heparan sulfate proteoglycan with a core protein mass of approximately 70 kDa. This target is anchored to the external cell membrane through a glycosylphosphatidylinositol (GPI) anchor. Glypican 3 is expressed mainly in tissues such as the liver and kidneys and plays a role in modulating cell growth and development. In research studies it is often studied in various species including in the mouse and cynomolgus monkey models where it's referred to as mouse glypican 3 and cynomolgus glypican 3 respectively.
Biological function summary	Glypican 3 is involved in the modulation of signaling pathways that control cell proliferation and differentiation. It does not function as an isolated element; it has a role as part of a complex network that interacts with growth factors morphogens and other proteoglycans. Glypican 3 assists in the regulation of important biological events by influencing the accessibility and activity of signaling molecules on the cell surface. Its heparan sulfate chains interact with multiple proteins modifying their function and availability.
Pathways	Glypican 3 plays a significant part in the Wnt and Hedgehog signaling pathways. In the Wnt pathway it regulates the distribution and gradient formation of Wnt proteins which are essential for proper embryonic development. In the Hedgehog pathway glypican 3 modulates the distribution and activity of Hedgehog proteins important for tissue patterning and organogenesis. Other proteins closely related

	to glypican 3 in these pathways include those from the frizzled family in the Wnt pathway and Patched proteins in the Hedgehog pathway.
Associated diseases and disorders	Glypican 3 has a strong connection to hepatocellular carcinoma (HCC) and Simpson-Golabi-Behmel syndrome (SGBS). In HCC increased expression of glypican 3 is often observed which associates it with tumor growth and proliferation. It functions alongside other oncogenic factors like alpha-fetoprotein (AFP) which is another marker for liver cancer. In SGBS mutations in the GPC3 gene result in defects in cellular signaling pathways leading to developmental abnormalities. This syndrome highlights the impact of glypican 3 on growth regulation and its interactions with insulin-like growth factors (IGFs).

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

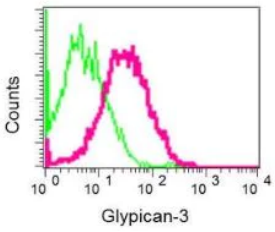
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images

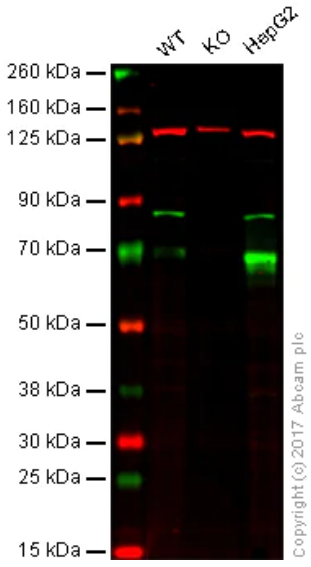


Flow Cytometry (Intracellular) - Anti-Glypican 3 antibody [EPR10641] - BSA and Azide free (ab221498)

Glypican 3 Flow Cytometry (Intracellular) staining using rabbit Anti-Glypican 3 antibody

This data was developed using ab174851, the same antibody clone in a different buffer formulation.

Intracellular flow cytometric analysis of permeabilized HepG2 cells labeling Glypican 3 using ab174851 at 1/10 dilution (red) or a rabbit IgG negative (green).



Western blot - Anti-Glypican 3 antibody [EPR10641] - BSA and Azide free (ab221498)

Glypican 3 Western blot staining using rabbit Anti-Glypican 3 antibody

This data was developed using ab174851, the same antibody clone in a different buffer formulation.
Lane 1: Wild-type HAP1 whole cell lysate (20 µg)

Lane 2: GPC3 knockout HAP1 whole cell lysate (20 µg)

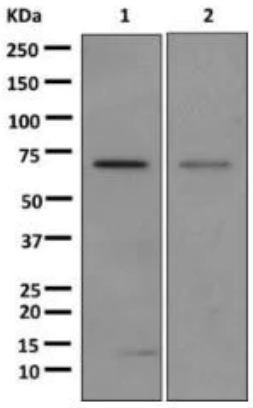
Lane 3: HepG2 whole cell lysate (20 µg)

Lanes 1 - 3: Merged signal (red and green). Green - ab174851 observed at 70 kDa. Red - loading control, ab130007, observed at 125 kDa.

ab174851 was shown to recognize Glypican 3 in wild-type HAP1 cells as signal was lost at the expected MW in GPC3 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and GPC3 knockout samples were subjected to SDS-PAGE. ab174851 and ab130007 (Mouse anti-vinculin loading control) were incubated overnight at 4°C at 1/1000 and 1/20000 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.

All lanes:
Western blot - Anti-Glypican 3 antibody [EPR10641] (ab174851)

Predicted band size: 66 kDa



Western blot - Anti-Glypican 3 antibody [EPR10641] - BSA and Azide free (ab221498)

This data was developed using ab174851, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Glypican 3 antibody [EPR10641] (ab174851) at 1/1000 dilution

Lane 1:
HepG2 cell lysate at 10 µg

Lane 2:
Human fetal liver lysate at 10 µg

Predicted band size: 66 kDa

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