abcam

ab259769

Anti-MGEA5/OGA antibody [EPR21929-274] - BSA and Azide free (Capture)

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR21929-274
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

sELISA

Expected

Species	Mouse, Human
Dilution info	Use at an assay dependent concentration.

Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10570
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information OGA

Function	Isoform 1. Cleaves GlcNAc but not GalNAc from O-glycosylated proteins (PubMed:11148210, PubMed:11788610, PubMed:20673219, PubMed:22365600, PubMed:24088714, PubMed:28939839, PubMed:37962578). Deglycosylates a large and diverse number of proteins, such as CRYAB, ELK1, GSDMD, LMNB1 and TAB1 (PubMed:28939839, PubMed:37962578). Can use p-nitrophenyl-beta-GlcNAc and 4-methylumbelliferone-GlcNAc as substrates but not p-nitrophenyl-beta-GalNAc or p-nitrophenyl-alpha-GlcNAc (in vitro) (PubMed:20673219). Does not bind acetyl-CoA and does not have histone acetyltransferase activity (PubMed:24088714). Isoform 3. Cleaves GlcNAc but not GalNAc from O-glycosylated proteins. Can use p-nitrophenyl-beta-GlcNAc as substrate but not p-nitrophenyl-beta-GalNAc or p-nitrophenyl-alpha-GlcNAc (in vitro), but has about six times lower specific activity than isoform 1.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab259769 is a BSA and Azide Free antibody supplied in an unconjugated format and it is suitable for sandwich ELISAs to quantify Human/Mouse OGA. The recommended pair for sandwich ELISA is:
Capture: ab259769, Human/Mouse OGA Capture Antibody (unconjugated)
Detector: ab259770, Human/Mouse OGA Detector Antibody (unconjugated)
The reference range value is 1.2 - 75 ng/mL for human and 0.23 - 15 ng/ml for mouse.

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.

Sandwich ELISA
The recommended antibody orientation is based on internal optimization for ELISA-based assays. Antibody orientation is assay dependent and needs to be optimized for each assay type. Please note that the range provided for this antibody is only an estimation based on the performance of the product using the recommended antibody pair. Performance of the antibody pair will depend on the specific characteristics of your assay. We guarantee the product works in sandwich ELISA, but we do not guarantee the sensitivity or dynamic range of the antibody in your assay.

Supplementary info

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

Activity summary	MGEA5 also referred to as OGA or O-GlcNAcase serves an important mechanical role in cellular metabolism. This enzyme with a molecular mass of around 103 kDa is primarily involved in the removal of O-GlcNAc modifications from serine/threonine residues on nuclear and cytoplasmic proteins. It is expressed in various tissues but exhibits predominant activity in the brain liver and pancreas. Alternative names like "OGA stains" or "OGA b" may also be encountered in literature or research contexts.

Biological function summary	MGEA5 acts as an important modulator of protein function and regulation by cycling O-GlcNAc modifications thereby influencing processes like transcription signal transduction and apoptosis. While not part of a well-defined complex it frequently interacts with other proteins involved in glucose metabolism and the cellular stress response. Its activity works in concert with OGT (O-GlcNAc transferase) which adds O-GlcNAc maintaining a balance important for cellular function.
Pathways	MGEA5 involvement centers largely around glucose homeostasis and the insulin signaling pathway. It modulates the function of proteins like insulin receptor substrate (IRS) and other key regulators in this pathway affecting metabolic regulation and energy homeostasis. It shows a direct relationship with OGT as they reciprocate in action effects highlighting their collaborative role in cellular pathways that affect cellular signaling and survival.
Associated diseases and disorders	MGEA5 has been implicated in neurodegenerative diseases and diabetes. In Alzheimer's disease altered O-GlcNAc cycling affects tau protein homeostasis which is significant in disease pathogenesis. Likewise in diabetes MGEA5 influences insulin resistance by regulating O-GlcNAc levels on insulin signaling molecules. Dysregulation of these processes may also involve proteins such as beta-amyloid further linking MGEA5 to these pathological states.

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

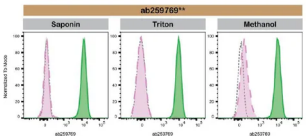
We do not recommend this combination. It is not covered by our product promise.

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.

2 product images



Flow Cytometry (Intracellular) - Anti-MGEA5/OGA antibody [EPR21929-274] - BSA and Azide free (Capture) (ab259769)

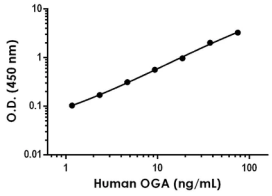
MGEA5/OGA Flow Cytometry (Intracellular) staining using rabbit Anti-MGEA5/OGA antibody

HAP2 wild-type and OGA knockout cells were labelled with a green or violet, fluorescent dye, respectively. Wild-type and knockout cells were mixed in a 1:1 ratio, fixed in 4% PFA and permeabilized in 0.1% Triton X-100.

Antibody staining was quantified using the Attune NxT Flow Cytometer with representative images showing the staining intensity in the knockout population (pink histogram, dashed line) compared to the wild-type cells (green histogram, solid line). Histograms with dotted lines represent secondary antibody-only controls in both wild-type and knockout cells.

Antibody dilution: 1/10570

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Sandwich ELISA - Anti-MGEA5/OGA antibody [EPR21929-274] - BSA and Azide free (Capture) (ab259769)

Representative standard curve from corresponding SimpleStep ELISA® Kit (ab269546).

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