abcam

ab77398

Anti-Monoacylglycerol Lipase/MGL antibody

Key facts

Isotype	IgG
Host species	Goat
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: Tris buffered saline, 0.5% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human MGLL aa 1-50. The exact immunogen used to generate this antibody is proprietary information. Database link Q99685
Purification technique	Affinity purification Immunogen
Specificity	abb77398 is expected to recognize both reported isoforms (NP_009214.1 and NP_001003794.1). Preliminary testing was unsuccessful on Rat.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab77398 was purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.

Reactivity data

WB

Tested

Species	Mouse
Dilution info	0.3-1 µg/mL

Notes	Primary incubation 1 hour at room temperature.

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Dog
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

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

Predicted

Species	Rat, Dog
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Expected

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

Predicted

Species	Rat, Dog
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat, Dog
Dilution info	-
Notes	-

Target data

See full target information MGLL

Function	Converts monoacylglycerides to free fatty acids and glycerol (PubMed:19029917, PubMed:20079333, PubMed:21049984, PubMed:22969151, PubMed:24368842). Hydrolyzes the endocannabinoid 2-arachidonoylglycerol, and thereby contributes to the regulation of endocannabinoid signaling, nociperception and perception of pain (PubMed:19029917, PubMed:20079333, PubMed:21049984, PubMed:22969151, PubMed:24368842). Regulates the levels of fatty acids that serve as signaling molecules and promote cancer cell migration, invasion and tumor growth (PubMed:20079333).

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	Monoacylglycerol lipase (MGL) also known as MAGL or lipase 63 is an enzyme with a mass of approximately 33 kDa. MGL primarily functions in lipid metabolism by hydrolyzing 2-monoacylglycerol (2-MAG) into free fatty acids and glycerol. This enzyme is expressed in many tissues with high expression in the brain liver and adipose tissue. Its activity plays a significant role in the breakdown of monoacylglycerol an important intermediate in the endocannabinoid signaling system.
Biological function summary	MGL contributes to the regulation of energy homeostasis by controlling the levels of 2-monoacylglycerol. It catalyzes the final step in the degradation of the endocannabinoid 2-arachidonoylglycerol (2-AG) which is important for modulating inflammation pain and mood. MGL is not known to be part of a larger protein complex. In the brain its action helps terminate endocannabinoid signaling therefore influencing neurotransmission and synaptic plasticity.
Pathways	MGL plays a critical role in the endocannabinoid and glycerolipid metabolism pathways. In the endocannabinoid system it interacts with the cannabinoid

	receptors CB1 and CB2 by regulating 2-AG levels. The protein's role in glycerolipid metabolism involves its interaction with long-chain acyl-CoA synthetase and fatty acid oxidation pathways which are essential for maintaining lipid balance and cellular energy.
Associated diseases and disorders	MGL has been linked to neurodegenerative diseases and cancer. In neurodegenerative diseases like Alzheimer’s dysregulation of MGL activity may lead to altered endocannabinoid signaling impacting neuronal health. In cancer increased MGL activity can promote tumor progression by providing cancer cells with fatty acids for growth and survival. MGL's interaction with proteins such as fatty acid synthase highlights its importance in cancer metabolism.

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

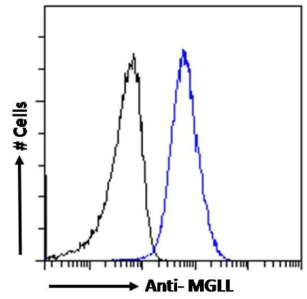
We do not recommend this combination. It is not covered by our product promise.

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.

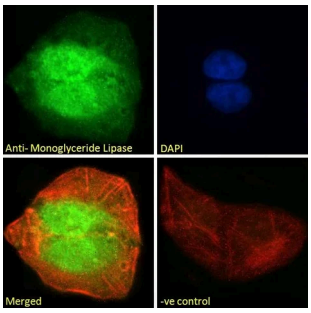
5 product images



Flow Cytometry (Intracellular) - Anti-Monoacylglycerol Lipase/MGL antibody (ab77398)

Monoacylglycerol Lipase/MGL Flow Cytometry (Intracellular) staining using goat Anti-Monoacylglycerol Lipase/MGL antibody

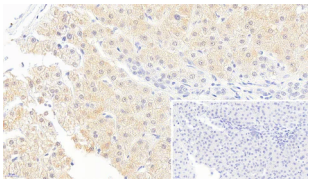
Flow cytometric analysis of paraformaldehyde fixed A431 cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr (10ug/ml) followed by Alexa Fluor 488 secondary antibody (1ug/ml). IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Monoacylglycerol Lipase/MGL antibody (ab77398)

Monoacylglycerol Lipase/MGL Immunocytochemistry/ Immunofluorescence staining using goat Anti-Monoacylglycerol Lipase/MGL antibody

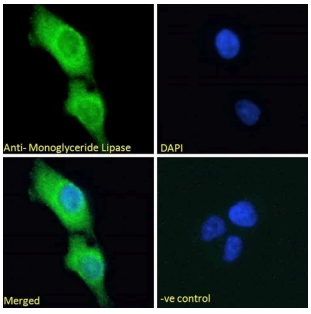
Immunocytochemistry/immunofluorescence analysis of paraformaldehyde fixed U2OS cells labelling Monoacylglycerol Lipase/MGL with ab77398. Cells were permeabilized with 0.15% Triton. Primary incubation 1hr (10 µg/mL) followed by Alexa Fluor® 488 secondary antibody (2 µg/mL), showing nuclear and cytoplasmic staining. Actin filaments were stained with phalloidin (red) and the nuclear stain is DAPI (blue). Negative control: Unimmunized goat IgG (10 µg/mL) followed by Alexa Fluor 488® secondary antibody (2 µg/mL).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Monoacylglycerol Lipase/MGL antibody (ab77398)

Monoacylglycerol Lipase/MGL Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using goat Anti-Monoacylglycerol Lipase/MGL antibody

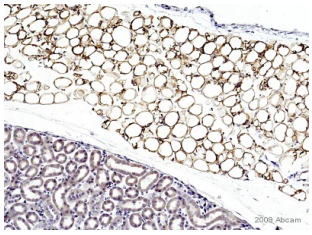
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human liver tissue labelling Monoacylglycerol Lipase/MGL with ab77398 at 5 µg/mL. Heat mediated antigen retrieval was performed using citrate buffer pH 6. Counterstained with hematoxylin.
Inset: Negative Control showing staining of paraffin embedded Human Liver, with no primary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Monoacylglycerol Lipase/MGL antibody (ab77398)

Monoacylglycerol Lipase/MGL Immunocytochemistry/ Immunofluorescence staining using goat Anti-Monoacylglycerol Lipase/MGL antibody

Immunocytochemistry/immunofluorescence analysis of paraformaldehyde fixed A431 cells labelling Monoacylglycerol Lipase/MGL with ab77398. Cells were permeabilized with 0.15% Triton. Primary incubation 1hr (10 µg/mL) followed by Alexa Fluor® 488 secondary antibody (2 µg/mL), showing cytoplasmic and endoplasmic reticulum staining. The nuclear stain is DAPI (blue). Negative control: Unimmunized goat IgG (10 µg/mL) followed by Alexa Fluor 488® secondary antibody (2 µg/mL).



This image is courtesy of a customer review submitted by Carl Hobbs, King's College London, United Kingdom

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Monoacylglycerol Lipase/MGL antibody (ab77398)

Immunohistochemical staining of Monoacylglycerol Lipase/MGL using ab77398 on Formaldehyde-fixed paraffin-embedded mouse adipose tissue sections (from around the kidney). Antigen retrieval step: heat mediated in citric acid HIER. Blocking step: 1% BSA for 10 mins @ rt°C. ab77398 incubated at 1/500 for 2 hours. Secondary Antibody: biotin labelled anti goat IgG used at 1/200. The submitted image shows white fat deposits around the kidney. Dilution factors vary between 1/300-500. There is a pale positivity in the renal tubular cytoplasm which appears to be specific (at lower dilution factor this is more obvious but, in this block the fat was too strongly immunostained). Section was endogenous biotin-blocked prior to incubation with primary Ab.

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