abcam

ab76316

Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y]

Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316) is a rabbit monoclonal antibody detecting Metabotropic Glutamate Receptor 5 in **Western Blot, Flow Cytometry (Intra), IHC-P, IHC-Fr, EM**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 40 publications
- Trusted since 2009

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR2425Y
Purification technique	Affinity purification Protein A
Specificity	The Human species recommendation is based on the WB results. This antibody has been tested for IHC-P and IHC-Fr in Human samples and we obtain positive signal only in IHC-Fr. We do not recommend this antibody for IHC-P in Human samples.
Concentration	0.14 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/250 - 1/500
Notes	Use of HRP-conjugated or polymerized HRP secondary antibodies, stronger signals have been found using the polymerized HRP secondary. We only recommend mouse and rat species for IHC-P. We do not guarantee IHC for Human species. Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/250 - 1/500
Notes	Use of HRP-conjugated or polymerized HRP secondary antibodies, stronger signals have been found using the polymerized HRP secondary. We only recommend mouse and rat species for IHC-P. We do not guarantee IHC for Human species. Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

EM

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/5000 - 1/10000
Notes	Please do not boil the sample before loading to the gel.

Species	Human
Dilution info	1/5000 - 1/10000
Notes	Please do not boil the sample before loading to the gel.

Expected

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

IHC-Fr

Tested

Species	Human
Dilution info	1 µg/mL

Notes	This antibody has been tested for IHC-P and IHC-Fr in Human samples and we obtain positive signal only in IHC-Fr. We do not recommend this antibody for IHC-P in Human samples.

Species	Mouse
Dilution info	1 µg/mL
Notes	This antibody has been tested for IHC-P and IHC-Fr in Human samples and we obtain positive signal only in IHC-Fr. We do not recommend this antibody for IHC-P in Human samples.

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information GRM5

Function	G-protein coupled receptor for glutamate. Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of down-stream effectors. Signaling activates a phosphatidylinositol-calcium second messenger system and generates a calcium-

activated chloride current. Plays an important role in the regulation of synaptic plasticity and the modulation of the neural network activity.

Storage

Shipped at conditions	Conditional Ambient
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

What is this antibody validated in?
Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunohistochemistry (IHC-Fr), Electron microscopy (EM) in Human, Mouse, Rat samples.

What is the molecular weight of Metabotropic Glutamate Receptor 5?
Anti-Metabotropic Glutamate Receptor 5 [EPR2425Y] (ab76316) specifically detects a band for Metabotropic Glutamate Receptor 5 (UniProt: P41594) at a molecular weight of 132kDa.

Trusted by the scientific community
Anti-Metabotropic Glutamate Receptor 5 [EPR2425Y] (ab76316) was first used in a scientific publication in 2009 and has been cited over 40 times in peer-reviewed journals.

Reviewed by scientists
Anti-Metabotropic Glutamate Receptor 5 [EPR2425Y] (ab76316) has over 5 independent reviews from customers.

Other related products
We have a range of other formats of antibody clone [EPR2425Y] also available for your convenience: ab76316, HRP - ab196482, Carrier free - ab219374, Carrier free - ab256589, APC - ab310880, PE - ab310939, Alexa Fluor® 488 - ab310960, Alexa Fluor® 594 - ab311666, Alexa Fluor® 568 - ab312940, Alexa Fluor® 555 - ab313151, Alexa Fluor® 750 - ab321725

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

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

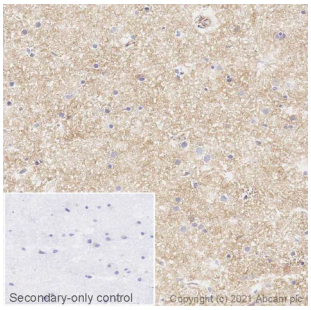
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images



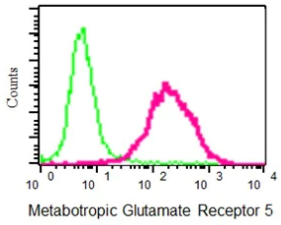
Immunohistochemistry (Frozen sections) - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Immunohistochemistry (Frozen sections) staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

IHC image of Metabotropic Glutamate Receptor 5 staining in a section of frozen normal human hippocampus* performed on a Leica BOND™ system using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab76316, 1 µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

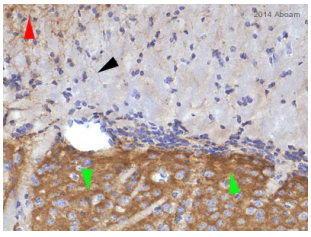
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre



Flow Cytometry (Intracellular) - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Flow Cytometry (Intracellular) staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

Intracellular flow cytometric analysis of permeabilized SH-SY5Y cells using ab76316 (red) at 1/20 or a rabbit IgG (ab172730) as a negative control (green). The cells were permeabilized with 2% PFA and a goat anti-rabbit IgG FITC was used as the secondary at 1/150.

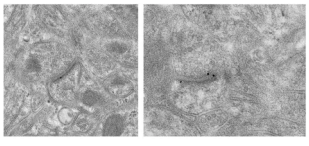


This image is courtesy of a customer review submitted by Carl Hobbs.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

ab76316 staining Metabotropic Glutmate Receptor 5 in mouse caudate putamen/ Corpus callosum by immunohistochemistry. Tissue was fixed with formaldehyde and citrate-mediated antigen retrieval was performed. Samples were blocked with 1% BSA for 10 minutes at 21°C, before incubation with the primary antibody (1/1000) for 2 hours at 21°C. A biotin conjugated goatanti-rabbit IgG secondary was used at 1/250.



Images courtesy of Professor Richard

Electron Microscopy - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Postembedding immunogold labeling of mouse neocortex using Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316). The tissue was embedded in Lowicryl HM20 resin. 60 nm sections were then cut and mounted on nickel mesh grids before undergoing antigen retrieval for 15 minutes in 0.01 M citrate buffer, pH 6 at 60°C.

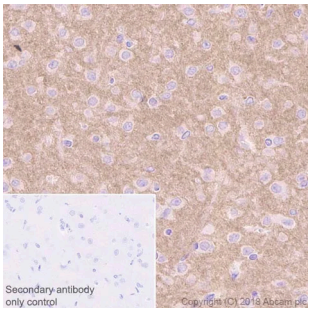
Weinberg, UNC School of Medicine

The sections were then blocked in 1% BSA/TBSN pH 7.6 and incubated overnight at room temperature with Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316) at 1:250. Sections were washed twice in TBSN pH 7.6, treated with 1% normal donkey serum/TBSN pH 8.2 for 30 minutes, before being incubated with donkey anti-rabbit IgG-Au 10-20 nm at 1:20 for two hours at room temperature.

Sections were then washed in TBSN pH 8.2, followed by water, before undergoing post-staining with 1% uranyl acetate and Sato's lead. They were then air dried before being transferred to an oven for 30 minutes at 60°C.

In these images you can see gold immunoparticles on the postsynaptic density of synapses.

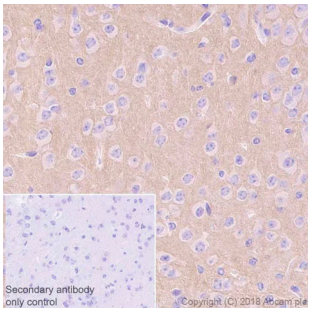
(TBSN = 0.02M TRIS buffered saline (0.3 N, pH 7.6 or 8.2) with 0.005% Tergitol NP-10)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

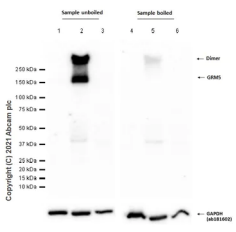
Immunohistochemical analysis of Paraffin-embedded rat cerebrum tissue sections labeling Metabotropic Glutamate Receptor 5 with ab76316 at 1/400 dilution followed by Goat Anti-Rabbit IgG H&L (HRP Polymer) secondary antibody. Sections were counterstained with Hematoxylin. Antigen retrieval was heat mediated using ab93684 (Tris/EDTA buffer, pH 9.0).
Positive staining on rat cerebrum.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

Immunohistochemical analysis of Paraffin-embedded mouse cerebrum tissue sections labeling Metabotropic Glutamate Receptor 5 with ab76316 at 1/400 dilution followed by Goat Anti-Rabbit IgG H&L (HRP Polymer) secondary antibody. Sections were counterstained with Hematoxylin. Antigen retrieval was heat mediated using ab93684 (Tris/EDTA buffer, pH 9.0).
Positive staining on mouse cerebrum.



Western blot - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Western blot staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

Buffer: 5% NFDM /TBST
Please do not boil the sample before loading to the gel.

GRM5 is a brain enriched protein, can be observed in most of the brain areas but low in spinal cord (PMID: 12783878).

All lanes:

Western blot - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316) at 1/10000 dilution

Lane 1:
Human spinal cord tissue lysate was not boiled before loading to the gel at 20 µg

Lane 2:
Human hippocampus tissue lysate was not boiled before loading to the gel at 20 µg

Lane 3:
Human liver tissue lysate was not boiled before loading to the gel at 20 µg

Lane 4:
Human spinal cord tissue lysate was boiled before loading to the gel at 20 µg

Lane 5:
Human hippocampus tissue lysate was boiled before loading to the gel at 20 µg

Lane 6:
Human liver tissue lysate was boiled before loading to the gel at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 132 kDa

Observed band size: 140 kDa, 280 kDa

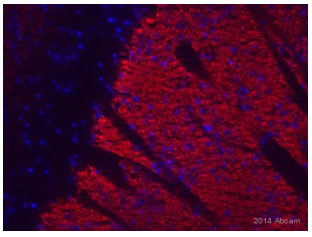
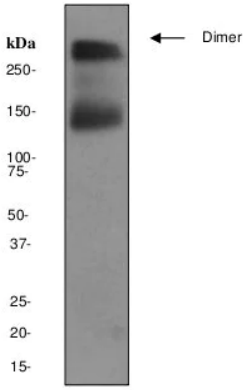


Image courtesy of Carl Hobbs, King College London, U.K.

Immunohistochemistry (Frozen sections) - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Immunohistochemistry (Frozen sections) staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

ab76316 staining Metabotropic Glutmate Receptor 5 in mouse caudate putamen/ Corpus callosum by immunohistochemistry (frozen sections). Tissue was fixed with formaldehyde and samples were blocked with 1% BSA for 10 minutes at 21°C, before incubation with the primary antibody (1/2000) for 16 hours at 21°C. An alexa fluor® 594 conjugated goat anti-rabbit IgG secondary was used at 1/500.



Western blot - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

All lanes:
Western blot - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316) at 1/10000 dilution

All lanes:
mouse brain lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit-HRP

Developed using the ECL technique.

Predicted band size: 132 kDa

Observed band size: 140-150 kDa, >250 kDa

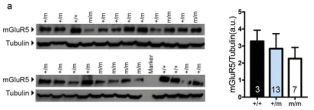


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] (ab76316)

Metabotropic Glutamate Receptor 5 Western blot staining using rabbit Anti-Metabotropic Glutamate Receptor 5 antibody

Metabotropic Glutamate Receptor 5 western blot using anti-Metabotropic Glutamate Receptor 5 antibody [EPR2425Y] ab76316. Publication image and figure legend from Chong, C. H., Li, Q., et al., 2019, Transl Psychiatry, PubMed 31582721.

ab76316 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab76316 please see the product overview.

Daily intraperitoneal injection of CDPPB in juvenile mutant mice has transient beneficial effects.a A trend of reduced synaptic mGluR5 in mutants (one-way ANOVA, P = 0.1707, n indicated in graph). b Schematic diagram of the CDPPB treatment protocol. The whole litter of mice from heterozygous breeding pairs was kept with their mother throughout the experiment. c Homozygous mutant mice had significantly better weight gain after drug treatment (two-way repeated measure ANOVA, group: $F(3,490) = 6.59$, $P = 0.0012$; no significant difference between +/+ and +/m. $p < 0.001$ for all other pairwise comparison between two groups. Number of mice (n) indicated in graph. Data collected from seven litters. d Same mice showed a trend of reduced injury when counted at postnatal day 26 in CDPPB-treated litters (P = 0.236). +/+, wild-type; +/m, heterozygotes; m/m, homozygous Lrrc7 mutant

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