abcam

Product datasheet

Anti-GABA B Receptor 1 antibody [2D7] ab55051

6 Abreviews 60 References 5 Images

Overview

Product name	Anti-GABA B Receptor 1 antibody [2D7]
Description	Mouse monoclonal [2D7] to GABA B Receptor 1
Host species	Mouse
Tested applications	**Suitable for:** WB, Flow Cyt, IHC-FoFr, IHC-Fr, ICC/IF
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Recombinant fragment: AVYIGALFPM SGGWPGGQAC QPAVEMALED VNSRRDILPD YELKLIHHDS KCDPGQATKY LYELLYNDPI KIILMPGCSS VSTLVAEAAR MWNLIVLSYG , corresponding to amino acids 52-151 of Human GABA B Receptor 1 Run BLAST with ExPASy Run BLAST with NCBI
General notes	This product was changed from ascites to tissue culture supernatant on 29th May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.4 Constituents: 8% Sodium chloride, 0.6% Dibasic monohydrogen sodium phosphate, 0.2% Monobasic dihydrogen potassium phosphate, 0.2% Potassium chloride, 91% Water
Purity	Tissue culture supernatant
Clonality	Monoclonal
Clone number	2D7

Isotype	IgG2a
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab55051 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★☆ (2)	Use at an assay dependent concentration. Predicted molecular weight: 108 kDa.
Flow Cyt		Use at an assay dependent concentration. **ab170191** - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.
IHC-FoFr	★★★★☆ (1)	Use at an assay dependent concentration.
IHC-Fr	★★★★☆ (3)	Use at an assay dependent concentration.
ICC/IF		Use at an assay dependent concentration.

Target

Function Receptor for GABA. The activity of this receptor is mediated by G-proteins that inhibit adenylyl cyclase activity, stimulates phospholipase A2, activates potassium channels, inactivates voltage-dependent calcium-channels and modulates inositol phospholipids hydrolysis. Plays a critical role in the fine-tuning of inhibitory synaptic transmission. Pre-synaptic GABA-B-R inhibit neurotransmitter release by down-regulating high-voltage activated calcium channels, whereas postsynaptic GABA-B-R decrease neuronal excitability by activating a prominent inwardly rectifying potassium (Kir) conductance that underlies the late inhibitory postsynaptic potentials. Not only implicated in synaptic inhibition but also in hippocampal long-term potentiation, slow wave sleep, muscle relaxation and antinociception. Activated by (-)-baclofen, cgp27492 and blocked by phaclofen.
Isoform 1E function may be to regulate the availability of functional GABA-B-R1A/GABA-B-R2 heterodimers by competing for GABA-B-R2 dimerization. This could explain the observation that certain small molecule ligands exhibit differential affinity for central versus peripheral sites.

Tissue specificity Highly expressed in brain and weakly in heart, small intestine and uterus. Isoform 1A is mostly expressed in granular cell and molecular layer. Isoform 1B is mostly expressed in Purkinje cells. Isoform 1E is predominantly expressed in peripheral tissues as kidney, lung, trachea, colon, small intestine, stomach, bone marrow, thymus and mammary gland.

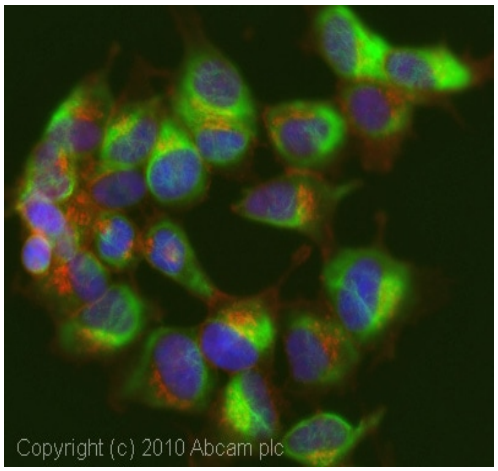
Sequence similarities Belongs to the G-protein coupled receptor 3 family. GABA-B receptor subfamily.
Contains 2 Sushi (CCP/SCR) domains.

Domain Alpha-helical parts of the C-terminal intracellular region mediate heterodimeric interaction with GABA-B receptor 2. The linker region between the transmembrane domain 3 (TM3) and the transmembrane domain 4 (TM4) probably play a role in the specificity for G-protein coupling.

Cellular localization Secreted and Cell membrane. Cell junction > synapse > postsynaptic cell membrane. Colocalizes

with ATF4 in hippocampal neuron dendritic membranes (By similarity). Moreover coexpression of GABA-B-R1 and GABA-B-R2 appears to be a prerequisite for maturation and transport of GABA-B-R1 to the plasma membrane.

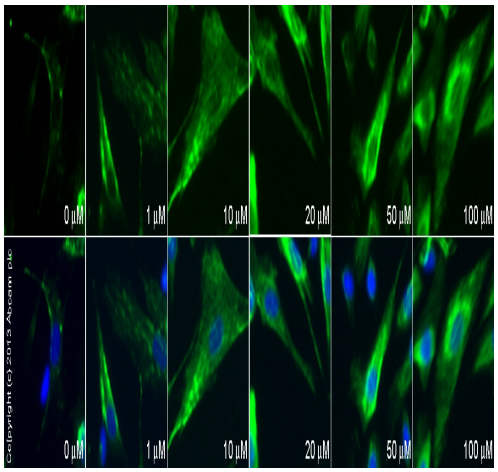
Images



Immunocytochemistry/ Immunofluorescence - Anti-GABA B Receptor 1 antibody [2D7] (ab55051)

ICC/IF image of ab55051 stained SHSY5Y cells. The cells were 4% formaldehyde 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 (ab55051, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 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.

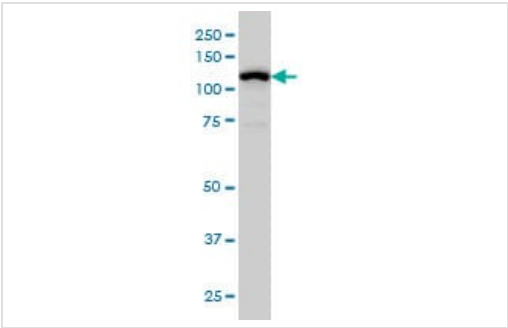
This image was generated using the ascites version of the product.



Immunocytochemistry/ Immunofluorescence - Anti-GABA B Receptor 1 antibody [2D7] (ab55051)

ab55051 staining GABA B receptor 1 in SK-N-SH cells treated with L-Glutamate (**ab120049**), by ICC/IF. Internalization of GABA B receptor 1 correlates with increased concentration of L-Glutamate, as described in literature.
The cells were incubated at 37°C for 30 minutes in media containing different concentrations of **ab120049** (L-Glutamate) in DMSO, fixed with 4% formaldehyde for 10 minutes at room temperature and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab55051 (1 µg/ml) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight 488 goat anti-mouse polyclonal antibody (**ab96879**) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.

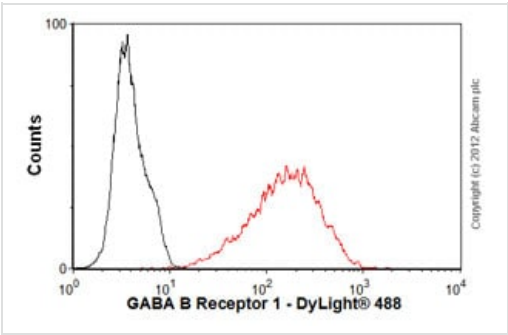
This image was generated using the ascites version of the product.



Western blot - Anti-GABA B Receptor 1 antibody [2D7] (ab55051)

GABA B Receptor 1 antibody (ab55051) at 1ug/lane + IMR-32 cell lysate at 25ug/lane.

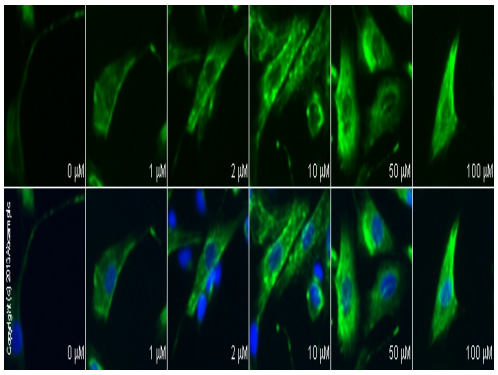
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-GABA B Receptor 1 antibody [2D7] (ab55051)

Overlay histogram showing SH-SY5Y cells stained with ab55051 (red line). The cells were fixed with 4% paraformaldehyde (10 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 (ab55051, 0.5µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (**ab96879**) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (**ab91361**, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in SH-SY5Y cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

This image was generated using the ascites version of the product.



Immunocytochemistry/ Immunofluorescence - Anti-GABA B Receptor 1 antibody [2D7] (ab55051)

ab55051 staining GABA B receptor 1 in SK-N-SH cells treated with NMDA (**ab120052**), by ICC/IF. Internalization of GABA B receptor 1 correlates with increased concentration of NMDA, as described in literature.

The cells were incubated at 37°C for 30 minutes in media containing different concentrations of **ab120052** (NMDA) in DMSO, fixed with 4% formaldehyde for 10 minutes at room temperature and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab55051 (1 µg/ml) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight 488 goat anti-mouse polyclonal antibody (**ab96879**) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.

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