abcam

Product datasheet

Anti-Glutamate Receptor 1 (AMPA subtype) antibody ab31232

⭐⭐⭐⭐⭐ **9 Abreviews**   **143 References**   4 Images

Overview

Product name	Anti-Glutamate Receptor 1 (AMPA subtype) antibody
Description	Rabbit polyclonal to Glutamate Receptor 1 (AMPA subtype)
Host species	Rabbit
Specificity	Based on sequence analysis, ab31232 shares 100% homology with Human, Mouse and Rat Glutamate Receptor 1 (AMPA subtype), however we have been unable to demonstrate reactivity with human tissues in experiments. Abcam welcomes customer feedback and would appreciate any comments regarding this product.
	Replenishment batches of our polyclonal antibody, ab31232 are tested in WB. Previous batches were additionally validated in IHC-FoFr and IHC-P. These applications are still expected to work and are covered by our Abpromise guarantee. You may also be interested in our alternative recombinant antibody, **ab183797**.
Tested applications	**Suitable for:** WB, IHC-P, IHC-FoFr
Species reactivity	**Reacts with:** Mouse, Rat, Common marmoset
	Predicted to work with: Human, Monkey ⚠
Immunogen	Synthetic peptide corresponding to Human Glutamate Receptor 1 (AMPA subtype) aa 850 to the C-terminus (C terminal). (Peptide available as **ab28424**)
General notes	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. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.

Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituent: PBS Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help.
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee	Our **Abpromise guarantee** covers the use of ab31232 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 a concentration of 1 µg/ml. Detects a band of approximately 100 kDa.Can be blocked with **Human Glutamate Receptor 1 (AMPA subtype) peptide (ab28424)**.
IHC-P	★★★★★ (4)	Use a concentration of 5 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.
IHC-FoFr	★★★★★ (1)	Use at an assay dependent concentration.

Target

|	
Function	Ionotropic glutamate receptor. L-glutamate acts as an excitatory neurotransmitter at many synapses in the central nervous system. Binding of the excitatory neurotransmitter L-glutamate induces a conformation change, leading to the opening of the cation channel, and thereby converts the chemical signal to an electrical impulse. The receptor then desensitizes rapidly and enters a transient inactive state, characterized by the presence of bound agonist.
Tissue specificity	Widely expressed in brain.
Sequence similarities	Belongs to the glutamate-gated ion channel (TC 1.A.10.1) family. GRIA1 subfamily.
Post-translational modifications	Palmitoylated. Depalmitoylated upon glutamate stimulation. Cys-603 palmitoylation leads to Golgi retention and decreased cell surface expression. In contrast, Cys-829 palmitoylation does not affect cell surface expression but regulates stimulation-dependent endocytosis.
Cellular localization	Cell membrane. Endoplasmic reticulum membrane. Cell junction > synapse > postsynaptic cell membrane. Interaction with CACNG2 promotes cell surface expression.

Images
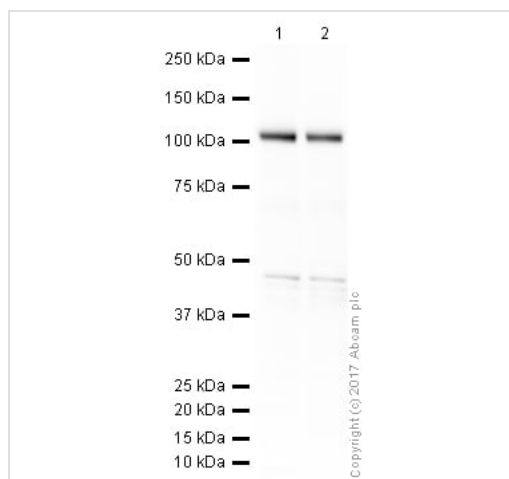
Western blot - Anti-Glutamate Receptor 1 (AMPA subtype) antibody (ab31232)

All lanes : Anti-Glutamate Receptor 1 (AMPA subtype) antibody (ab31232) at 1 µg/ml

Lane 1 : Brain (Mouse) Tissue Lysate
Lane 2 : Brain (Rat) Tissue Lysate

Lysates/proteins at 10 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) preadsorbed at 1/50000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 102 kDa
Observed band size: 102 kDa
Additional bands at: 47 kDa. We are unsure as to the identity of these extra bands.

Exposure time: 20 minutes

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 2% Bovine Serum Albumin before being incubated with ab31232 overnight at 4°C. Antibody binding was detected using an anti-rabbit antibody conjugated to HRP, and visualised using ECL development solution **ab133406**.
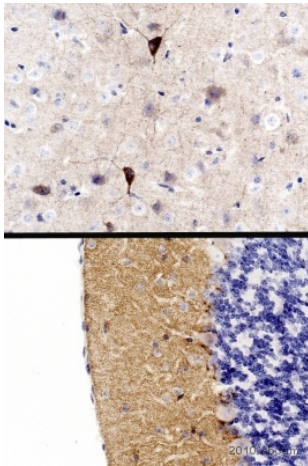
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glutamate Receptor 1 (AMPA subtype) antibody (ab31232)

This image is courtesy of Carl Hobbs, King's College London, United Kingdom
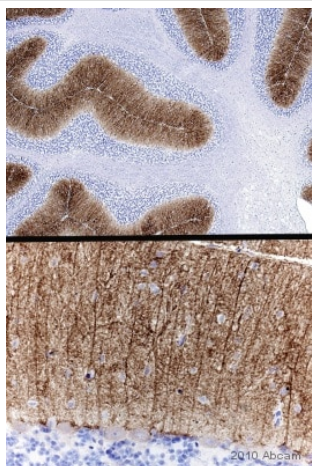
Immunohistochemistical detection of Glutamate Receptor 1 (AMPA subtype) with ab31232 on formaldehyde-fixed paraffin-embedded mouse brain sections. Antigen retrieval step: heat mediated in Citric acid pH6 buffer.Blocking step: 1%BSA for 10 mins @ rt°C. Primary antibody ab31232 incubated at 1/100 for 2 hours. Secondary antibody: anti-rabbit IgGs conjugated to biotin (1/200). The composite image shows immunostaining in cell bodies and processes of a subset of neurones in the mouse cortex (upper image) and also in the dendritic fields of the molecular layer of the mouse cerebellum (lower image). Purkinje cells of the cerebellum are negative but their primary processes are clearly delineated by a punctate membrane-region positivity. What appears to be small cells in close contact with the Purkinje cell bodies are strongly positive (perhaps these are basket cells?).
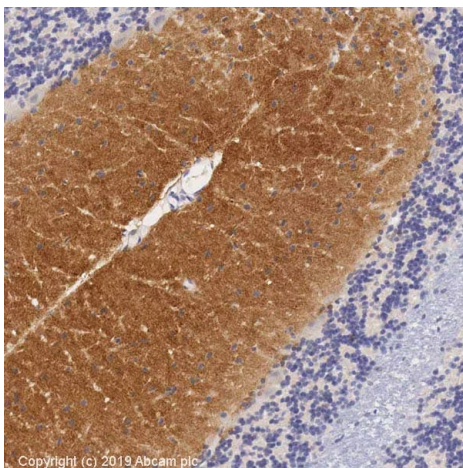
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glutamate Receptor 1 (AMPA subtype) antibody (ab31232)

IHC image of Glutamate Receptor 1 (AMPA subtype) staining in a section of formalin-fixed paraffin-embedded normal rat brain performed on a Leica BOND^{TM} system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab31232, 1ug/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.

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.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glutamate Receptor 1 (AMPA subtype) antibody (ab31232)

This image is courtesy of Carl Hobbs, King's College London, United Kingdom

Immunohistochemistical detection of Glutamate Receptor 1 (AMPA subtype) with ab31232 on formaldehyde-fixed paraffin-embedded rat cerebellum sections. Antigen retrieval step: heat mediated in citric acid pH6. Blocking step: 1% BSA for 10 mins @ rt°C. Primary antibody was incubated at 1/200 for 2 hours @ room temp. Secondary antibody: anti-rabbit IgGs conjugated to biotin (1/200). The composite image shows localisation of this protein apparently exclusive to the molecular layer of the cerebellum upper image (low power). In the lower image (higher power), the molecular layer positivity appears to be compartmentalised/restricted.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours

- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit **https://www.abcam.com/abpromise** or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors