abcam

ab109431

Anti-GluA4 antibody [EPR2512(2)]

Recombinant | RabMAb

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	EPR2512(2)
Purification technique	Affinity purification Protein A
Concentration	0.351 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Mouse
Dilution info	-
Notes	-

Expected

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

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse

Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Human
Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information GRIA4

Function

Ionotropic glutamate receptor that functions as a ligand-gated cation channel, gated by L-glutamate and glutamatergic agonists such as alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA), quisqualic acid, and kainic acid (By similarity). L-glutamate acts as an excitatory neurotransmitter at many synapses in the central nervous system and plays an important role in fast excitatory synaptic transmission (By similarity). 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 upon entry of monovalent and divalent cations such as sodium and calcium. The receptor then desensitizes rapidly and enters a transient inactive state, characterized by the presence of bound agonist (By similarity). In the presence of CACNG8, shows resensitization which is characterized by a delayed accumulation of current flux upon continued application of L-glutamate (PubMed:21172611).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Storage information	Stable for 12 months at -20°C

Notes

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.

Supplementary info

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

Activity summary	The protein GluA4 also known as GluR4 or AMPA receptor subunit 4 plays a critical role in synaptic transmission. This receptor belongs to the family of ionotropic glutamate receptors which are activated by the neurotransmitter glutamate. As part of the AMPA receptor complex GluA4 contributes to the fast synaptic responses in the central nervous system. The GluA4 protein has a molecular mass of approximately 100 kDa and is prominently expressed in the brain particularly in the cerebellum and cortex although expression can vary by specific neuronal populations.
Biological function summary	GluA4 functions as an integral component of the AMPA receptor complex which mediates synaptic plasticity and strength. AMPA receptors like GluA4 facilitate the influx of sodium and calcium ions upon glutamate binding essential for long-term potentiation a cellular process playing an important role in learning and memory. GluA4 forms tetrameric complexes that co-assemble with other AMPA receptor subunits such as GluA1 GluA2 and GluA3 providing diversity in the receptor properties.
Pathways	GluA4 is embedded within the glutamatergic signaling pathways important for synaptic transmission and plasticity. It plays a part in the long-term potentiation (LTP) and long-term depression (LTD) pathways both of which involve calcium-dependent signaling cascades. These pathways often overlap with the functions of other proteins such as NMDA receptors which also bind glutamate and help regulate the same synaptic responses.
Associated diseases and disorders	GluA4 has associations with neurological conditions like epilepsy and schizophrenia. Its dysregulation in AMPA receptor-mediated pathways may contribute to aberrant synaptic transmission observed in these disorders. GluA4 works in conjunction with other receptor subunits and related proteins like PSD-95

which further connects it to the synaptic architecture and signaling alterations seen in these conditions.

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

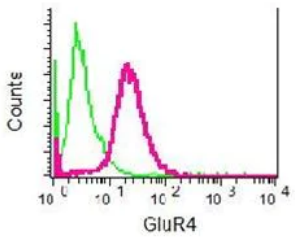
We do not recommend this combination. It is not covered by our product promise.

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.

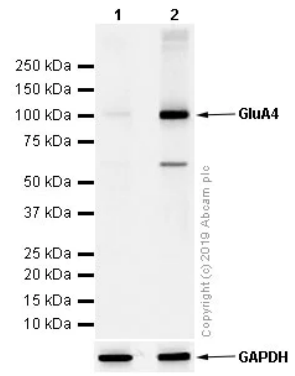
3 product images



Flow Cytometry (Intracellular) - Anti-GluA4 antibody [EPR2512(2)] (ab109431)

GluA4 Flow Cytometry (Intracellular) staining using rabbit Anti-GluA4 antibody

Intracellular flow cytometric analysis of permeabilized SH-SY5Y (Human neuroblastoma cell line from bone marrow) cells using ab109431 at 1/10 dilution (red) or a rabbit IgG (negative) (green).



Western blot - Anti-GluA4 antibody [EPR2512(2)] (ab109431)

GluA4 Western blot staining using rabbit Anti-GluA4 antibody

We recommend to use 1%SDS Hot lysis prepare method to get desired Western Blot results.
Blocking/Diluting Buffer and concentration:
5% NFDM/TBST

All lanes:
Western blot - Anti-GluA4 antibody [EPR2512(2)] (ab109431) at 1/1000 dilution

Lane 1:
Rat brain prepared in RIPA lysis method at 15 µg

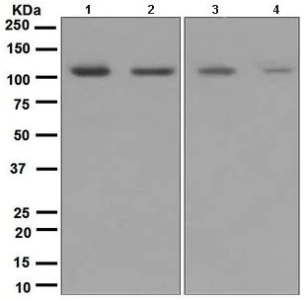
Lane 2:
Rat brain prepared in 1%SDS Hot lysis method at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 101 kDa

Observed band size: 101 kDa



Western blot - Anti-GluA4 antibody [EPR2512(2)] (ab109431)

All lanes:
Western blot - Anti-GluA4 antibody [EPR2512(2)] (ab109431) at 1/1000 dilution

Lane 1:
Rat brain lysate at 10 µg

Lane 2:
Mouse brain lysate at 10 µg

Lane 3:
Human cerebellum lysate at 10 µg

Lane 4:
SH-SY5Y lysate at 10 µg

Predicted band size: 101 kDa

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