abcam

ab245228

Anti-EGR2 antibody [EPR23228-40]

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	EPR23228-40
Purification technique	Affinity purification Protein A
Concentration	0.546 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ChIP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat

Dilution info	1/1000
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/10650
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Target data

See full target information Egr2

Function	Sequence-specific DNA-binding transcription factor (PubMed:11823429, PubMed:1674431, PubMed:1969796, PubMed:31852952). Plays a role in hindbrain segmentation by regulating the expression of a subset of homeobox containing genes and in Schwann cell myelination by regulating the expression of genes involved in the formation and maintenance of myelin (PubMed:11823429, PubMed:1674431, PubMed:1969796, PubMed:31852952, PubMed:8093858). Binds to two EGR2-consensus sites EGR2A (5'-CTGTAGGAG-3') and EGR2B (5'-ATGTAGGTG-3') in the HOXB3 enhancer and promotes HOXB3 transcriptional activation (PubMed:11823429). Binds to specific DNA sites located in the promoter region of HOXA4, HOXB2 and ERBB2 (PubMed:17938205, PubMed:1969796, PubMed:8093858). Regulates hindbrain segmentation by controlling the expression of Hox genes, such as HOXA4, HOXB3 and HOXB2, and thereby specifying odd and even rhombomeres (PubMed:11823429, PubMed:1674431). Promotes the expression of HOXB3 in the rhombomere r5 and of HOXB3 in r3 and r5 in the hindbrain (PubMed:11823429, PubMed:8093858). Regulates myelination in the peripheral nervous system after birth, possibly by regulating the expression of myelin proteins, such as MPZ, and by promoting the differentiation of Schwann cells (PubMed:10068633, PubMed:7935840). Involved in the development of the jaw openener musculature, probably by playing a role in its innervation through trigeminal motor neurons (PubMed:11509834). May play a role in adipogenesis, possibly by regulating the expression of CEBPB (PubMed:16054051). E3 SUMO-protein ligase helping SUMO1 conjugation to its coregulators NAB1 and NAB2, whose sumoylation down-regulates EGR2 transcriptional 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

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	EGR2 also known as early growth response 2 or KROX20 refers to a transcription factor with a mass of approximately 53 kDa. This protein plays a significant role in gene expression and regulates various genes involved in cellular growth and differentiation. EGR2 is expressed in various tissues with notable presence in the nervous system particularly within Schwann cells and the developing vertebrate nervous system. It can also be found in immune system cells including T and B cells.
Biological function summary	EGR2 influences the development and function of the peripheral nervous system contributing to processes like nerve myelination. It acts as a transcriptional regulator controlling the expression of genes that are essential for the maintenance of myelin sheaths around nerves. While EGR2 does not directly form part of a protein complex its role as a transcription factor allows it to interact with many other proteins to exert its regulatory functions.
Pathways	EGR2 participates in cellular pathways such as the MAPK/ERK signaling pathway and the immune response pathway. In the MAPK/ERK pathway EGR2 interacts with proteins like ERK1/2 to regulate cell growth and differentiation. In immune response pathways EGR2 modulates the differentiation of T cells impacting immune homeostasis and function by influencing gene expression pertinent to immune regulation.

Associated diseases and disorders	Mutations or dysregulation of EGR2 can relate to Charcot-Marie-Tooth disease type 1 a peripheral nerve disorder. This neuropathy impacts myelin production where alterations in EGR2 play a role alongside proteins like PMP22 which are also affected in the disorder. Additionally EGR2 expression irregularities have been studied in connection with systemic lupus erythematosus in which immune cell regulation becomes impaired affecting proteins involved in immune signaling.

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

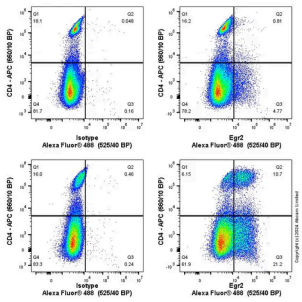
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images



Flow Cytometry (Intracellular) - Anti-EGR2 antibody [EPR23228-40] (ab245228)

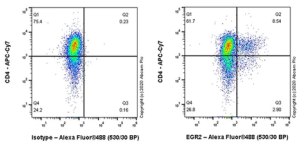
EGR2 Flow Cytometry (Intracellular) staining of Mouse splenocytes using rabbit Anti-EGR2 antibody

Flow cytometry overlay histogram showing mouse splenocytes treated with 5 µg/ml anti-mouse CD3 and 2 µg/ml CD28 for 16 hours (bottom row) and untreated negative mouse splenocytes (top row), stained with ab245228 (right side) or isotype control (left side). The cells were incubated in 1x PBS containing 10% mouse serum and 10 % normal goat serum to block FC receptors and non-specific protein-protein interaction. Cells were then fixed and permeabilised with CytoFix/CytoPerm, followed by addition of the antibody (ab245228) (1x 10^6 in 100µl at 0.2µg/ml (1/10,500)) for 30min at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/2000 for 30min at 22°C

Isotype control antibody was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control used at the same concentration and conditions as the primary antibody.

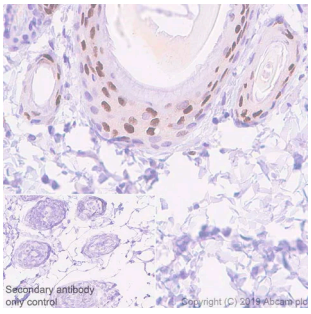
Acquisition of >30,000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.



Flow Cytometry (Intracellular) - Anti-EGR2 antibody [EPR23228-40] (ab245228)

EGR2 Flow Cytometry (Intracellular) staining using rabbit Anti-EGR2 antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde fixed, True-Nuclear buffer-permeabilized Mouse splenocyte (treated with 5ug/ml anti-mouse CD3 and 2ug/ml anti-mouse CD28 for 16h) cells labelling EGR2 with ab245228 at 1/500 dilution (Right) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Left). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.
Cells were surface stained with anti-CD4 conjugated to APC-Cy7 . Then fixed with 2% PFA for 10min followed by intracellularly stained with rabbit IgG (Left) or ab245228 (Right).

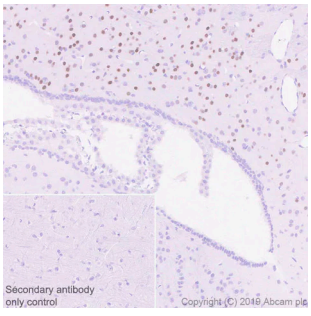


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-EGR2 antibody [EPR23228-40] (ab245228)

EGR2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-EGR2 antibody

Immunohistochemical analysis of paraffin-embedded Rat skin tissue labeling EGR2 with ab245228 at 1/2000 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). IHC results showed nuclear staining on the rat skin (PMID: 21514423, 21514423).The section was incubated with ab245228 for 30 mins at room temperature. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins



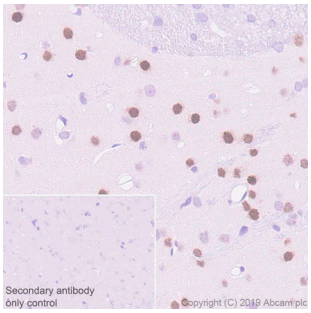
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-EGR2 antibody [EPR23228-40] (ab245228)

EGR2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-EGR2 antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling EGR2 with ab245228 at 1/2000 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). IHC results showed nuclear staining on the mouse cerebrum (PMID: 30122531).The section was incubated with ab245228 for 30 mins at room temperature. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins

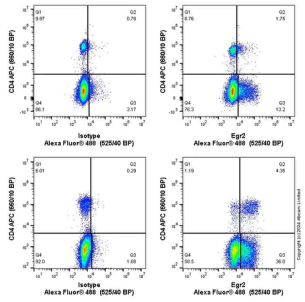


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-EGR2 antibody [EPR23228-40] (ab245228)

EGR2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-EGR2 antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebrum tissue labeling EGR2 with ab245228 at 1/2000 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). IHC results showed nuclear staining on the rat cerebrum.The section was incubated with ab245228 for 30 mins at room temperature. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins



Flow Cytometry (Intracellular) - Anti-EGR2 antibody [EPR23228-40] (ab245228)

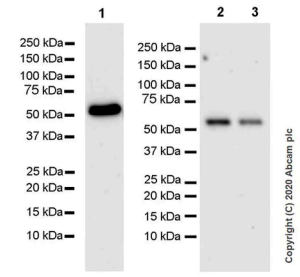
EGR2 Flow Cytometry (Intracellular) staining using rabbit Anti-EGR2 antibody

Flow cytometry overlay histogram showing mouse splenocytes treated with 2.5µg/ml Concanavalin A for 24 hours (bottom panel) and negative untreated mouse splenocytes (top panel) stained with ab245228. The cells were incubated in 1x PBS containing 10µg/ml anti CD16/CD32 and 10% normal goat serum to block FC receptors and non-specific protein-protein interactions, followed by the antibody (ab245228) (1x 10^6 in 100µl at 5 µg/ml (1/100 dilution)) and CD4-APC multistain for 30min on ice.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min on ice.

Isotype control antibody (black line) was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.



Western blot - Anti-EGR2 antibody [EPR23228-40] (ab245228)

Blocking and dilution buffer: 5% NFDM/TBST.
Exposure time: 3 minutes.

The molecular weight observed is consistent with what has been described in the literature (PMID: 23747308).

All lanes:

Western blot - Anti-EGR2 antibody [EPR23228-40] (ab245228) at 1/1000 dilution

Lane 1:
Mouse P0 cerebellum tissue lysate at 20 µg

Lane 2:
Mouse thymus tissue lysate at 20 µg

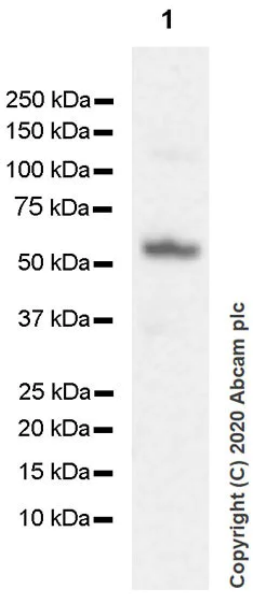
Lane 3:
Rat thymus tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 50 kDa

Observed band size: 53 kDa



Western blot - Anti-EGR2 antibody [EPR23228-40] (ab245228)

Blocking and dilution buffer: 5% NFDM/TBST.
Expopsure time: 3 minutes.

The molecular weight observed is consistent with what has been described in the literature (PMID: 23747308).

All lanes:
Western blot - Anti-EGR2 antibody [EPR23228-40] (ab245228) at 1/1000 dilution

All lanes:
Rat brain tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 50 kDa

Observed band size: 53 kDa

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