abcam

ab176324

Anti-Delta Opioid Receptor antibody [EPR5029(2)]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	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	EPR5029(2)
Purification technique	Affinity purification Protein A
Concentration	0.72 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Expected

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

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/150
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	-

WB

Tested

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

Species	Human

Dilution info	1/1000 - 1/10000
Notes	-

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

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information OPRD1

Function	G-protein coupled receptor that functions as a receptor for endogenous enkephalins and for a subset of other opioids. Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of down-stream effectors, such as adenylate cyclase. Signaling leads to the inhibition of adenylate cyclase activity. Inhibits neurotransmitter release by reducing calcium ion currents and increasing potassium ion conductance. Plays a role in the perception of pain and in opiate-mediated analgesia. Plays a role in developing analgesic tolerance to morphine.

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	The Delta Opioid Receptor also known as DOR is a G protein-coupled receptor involved in the modulation of pain mood and neuroprotection. It is a transmembrane protein with a mass around 40 kDa. The receptor is often expressed in the central nervous system particularly in areas such as the brain and spinal cord. Due to its role in analgesic pathways the receptor's function is of great interest for pain management therapies. Present in various tissues the presence of delta opioid receptors can influence different physiological processes.
Biological function summary	Delta opioid receptors participate in the modulation of neurotransmitter release neuronal excitability and neurogenesis. These receptors form part of a complex that includes other opioid receptors such as mu and kappa receptors interacting to fine-tune the body's response to pain and stress. Activation of delta opioid receptors results in analgesic effects making them potential targets for therapeutic interventions in pain management. Their expression in peripheral tissues also suggests roles in immune and inflammatory responses.
Pathways	Delta opioid receptors fit into the opioid receptor signaling cascades that influence pain perception and reward mechanisms. The major pathways include the adenylate cyclase inhibition pathway which reduces the production of cAMP and the MAPK cascade promoting cell survival and differentiation. These receptors commonly interact with G proteins such as Gi/o proteins to mediate cellular responses. Delta 5029 and delta 193 are segments of research focusing on specific pathways where delta 193 relates to receptor trafficking and delta 5029 involves receptor desensitization mechanisms.
Associated diseases and disorders	Delta opioid receptors are linked to conditions like chronic pain and depression. Alterations in delta opioid receptor expression or function contribute to these disorders suggesting their involvement in pathological states. Through their involvement in opioid signaling they connect to disorders characterized by altered

brain chemistry such as depression. Proteins interacting with delta receptors in these contexts include other opioid receptors which share overlapping roles in emotional regulation and pain perception. Antagonists or agonists like anti-delta antibodies are researched for potential therapeutic applications in these diseases.

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

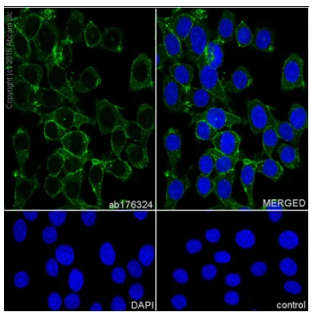
We do not recommend this combination. It is not covered by our product promise.

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

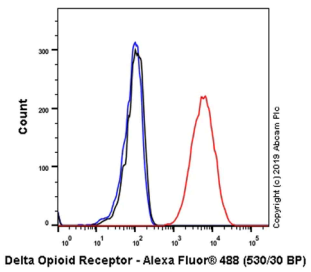


Immunocytochemistry/ Immunofluorescence - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

Delta Opioid Receptor Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Delta Opioid Receptor antibody

Immunocytochemistry/Immunofluorescence analysis of SH-SY5Y cells labelling Delta Opioid Receptor at 1/500. Cells were fixed with 100% Methanol. An ab150077 AlexaFluor®488 Goat anti-Rabbit secondary (1/1000) was used as the secondary antibody. Nuclei counterstained with DAPI (blue).

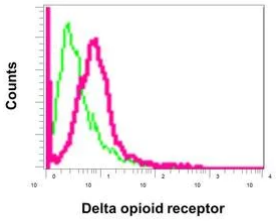
Control: primary antibody (1/500) and secondary antibody, ab150077 AlexaFluor®488 Goat anti-Rabbit secondary IgG (1/1000).



Flow Cytometry (Intracellular) - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

Delta Opioid Receptor Flow Cytometry (Intracellular) staining using rabbit Anti-Delta Opioid Receptor antibody

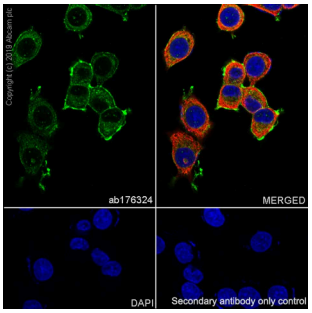
Flow Cytometry analysis of U-87 MG (Human glioblastoma-astrocytoma epithelial cell) cells labeling Delta Opioid Receptor with purified ab176324 at 1/150 dilution (10 µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Flow Cytometry (Intracellular) - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

Delta Opioid Receptor Flow Cytometry (Intracellular) staining using rabbit Anti-Delta Opioid Receptor antibody

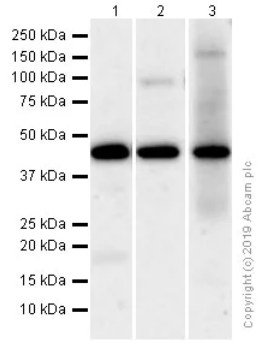
Flow cytometric analysis of U87-MG cells labeling Delta Opioid Receptor using ab176324 at a 1/10 dilution (red) or a rabbit IgG control (green).



Immunocytochemistry/ Immunofluorescence - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

Delta Opioid Receptor Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Delta Opioid Receptor antibody

Immunocytochemistry/ Immunofluorescence analysis of SH-SY5Y (Human neuroblastoma epithelial cell) cells labeling Delta Opioid Receptor with purified ab176324 at 1/100 dilution (10 µg/ml). Cells were fixed in 100% Methanol and permeabilized with None. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Western blot - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

All lanes:
Western blot - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324) at 1/2000 dilution

Lane 1:
Human brain lysates at 20 µg

Lane 2:
Mouse spleen lysates at 20 µg

Lane 3:
Rat spleen lysates at 20 µg

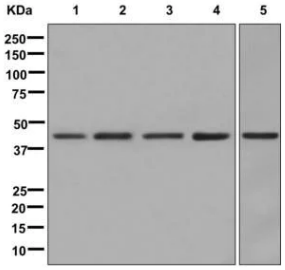
Secondary

All lanes:

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

Predicted band size: 40 kDa

Observed band size: 40 kDa



Western blot - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

All lanes:
Western blot - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324) at 1/1000 dilution

Lane 1:
Human cerebellum lysate at 10 µg

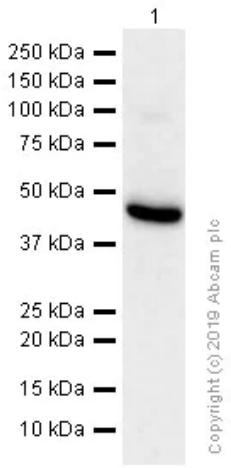
Lane 2:
Human fetal brain lysate at 10 µg

Lane 3:
U87-MG lysate at 10 µg

Lane 4:
HUVEC lysate at 10 µg

Lane 5:
SH-SY5Y lysate at 10 µg

Predicted band size: 40 kDa



Western blot - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

All lanes:
Western blot - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324) at 1/10000 dilution

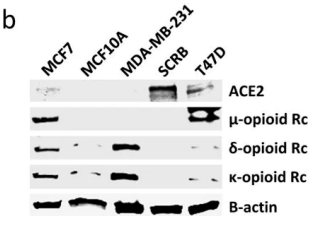
All lanes:
Mouse brain lysates at 20 µg

Secondary

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

Predicted band size: 40 kDa

Observed band size: 40 kDa



Western blot - Anti-Delta Opioid Receptor antibody [EPR5029(2)] (ab176324)

Delta Opioid Receptor western blot using anti-Delta Opioid Receptor antibody [EPR5029(2)] ab176324. Publication image and figure legend from Leoncikas, V., Wu, H., et al., 2016, Sci Rep, PubMed 26813959.

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ab176324 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 ab176324 please see the product overview.

Deregulated casomorphin metabolism is a metabolic feature of poor patient prognosis tumours but is not associated with enhanced cell viability in vitro.(a) Personalized GSMNs were derived from the 997 patient transcriptome profiles within the Metabric discovery set. Comparison of the 134 personalized GSMNs associated with poor patient with the remaining 863 personalized reveals casomorphin degradation as a major driver for this separation, through increased ACE2 expression (E.C. 3.4.17.23, indicated in red). Exposure of breast cancer cell lines with the ACE2 inhibitor DX600, or β-casomorphin had no significant impact on cell proliferation. (b) Expression of network components (ACE2, MOR, DOR and KOR) in breast cancer cell lines. (c) Pharmacological perturbation of proposed network for 72h in MCF7, SKBR3 and T47D cell lines has not significant impact on the cell proliferation rate. Results are expressed as a percentage of vehicle control; each data point represents the mean of a minimum of three independent experiments of 3 wells per experiment, with error bars representing the standard error of the mean (SEM).

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