abcam

ab240140

Anti-GNAI2 antibody [EPR9469] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR9469
Purification technique	Affinity purification Protein A
Concentration	1.06 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-

Notes	-

Target data

See full target information GNAI2

Function	Guanine nucleotide-binding proteins (G proteins) function as transducers downstream of G protein-coupled receptors (GPCRs) in numerous signaling cascades (PubMed:38505600, PubMed:29925945, PubMed:35637350, PubMed:35365641). The alpha chain contains the guanine nucleotide binding site and alternates between an active, GTP-bound state and an inactive, GDP-bound state (PubMed:12359238). Signaling by an activated GPCR promotes GDP release and GTP binding (PubMed:29925945). Examples of interacting GPCRs include the adenosine A1 receptor/ADORA1, CNR1, and FPR2 (PubMed:29925945, PubMed:35637350, PubMed:35365641). The alpha subunit has a low GTPase activity that converts bound GTP to GDP, thereby terminating the signal. Both GDP release and GTP hydrolysis are modulated by numerous regulatory proteins (PubMed:12359238). Signaling is mediated via effector proteins, such as adenylate cyclase: inhibits adenylate cyclase activity of ADCY1, ADCY5 and ADCY6, leading to decreased intracellular cAMP levels. Plays an important role in the activation of the transcription factor NFAT in endothelial cells to promote angiogenesis (PubMed:38505600). The G(i) proteins are involved in hormonal regulation of adenylate cyclase: they inhibit the cyclase in response to beta-adrenergic stimuli. Plays an essential role for neutrophil recruitment in the context of acute inflammation suggesting a linked function of both GNAI2 in neutrophils and endothelial cells for polymorphonuclear neutrophils transmigration (By similarity). Isoform sGi2. Regulates the cell surface density of dopamine receptors DRD2 by sequestrating them as an intracellular pool.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab240140 is the carrier-free version of ab157204.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	GNAI2 also known as Gi2 alpha-subunit is a G protein subunit encoded by the GNAI2 gene. It has a molecular weight of approximately 40 kDa. It influences intracellular signaling pathways by inhibiting adenylyl cyclase and decreasing the levels of cyclic AMP (cAMP) within the cell. GNAI2 is found in a variety of tissues with high expression in the brain heart and lymphoid tissues. This wide expression pattern shows its importance in different physiological processes across various organs.
Biological function summary	GNAI2 functions as part of heterotrimeric G protein complexes. It couples with receptors on the cell surface transmitting signals from activated receptors to downstream effectors. GNAI2 binds with GDP in its inactive state and exchanges it for GTP upon receptor activation which causes the dissociation of the G protein into G alpha and G beta-gamma subunits continuing the signaling cascade. GNAI2 contributes to the modulation of processes such as neurotransmission immune responses and cell proliferation.
Pathways	GNAI2 plays an important role in the MAPK/ERK pathway and the PI3K/Akt signaling pathway. It interacts with various receptors and proteins to regulate cellular responses to external stimuli. For instance through the MAPK/ERK pathway GNAI2 influences gene expression and cell division while in the PI3K/Akt pathway it plays a role in cell survival and apoptosis. Its interaction with proteins like G-beta and G-gamma subunits emphasizes its integrative function in coordinating signal transduction.
Associated diseases and disorders	GNAI2 has links to certain types of cancer and autoimmune diseases. Mutations or dysregulations in GNAI2 expression can influence cancer progression through

abnormal cell signaling pathways. Additionally in autoimmune disorders aberrations in GNAI2 signaling can disrupt immune responses contributing to the pathology of diseases like systemic lupus erythematosus. GNAI2 interacts with proteins like adenylyl cyclase and specific receptor proteins which are important for maintaining normal cellular signaling and their dysregulation can lead to disease.

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

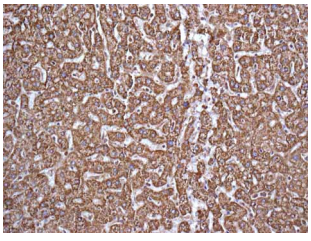
We do not recommend this combination. It is not covered by our product promise.

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

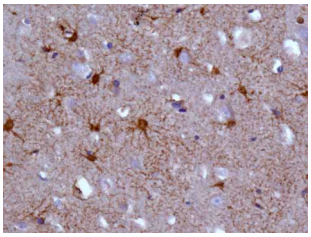


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GNAI2 antibody [EPR9469] - BSA and Azide free (ab240140)

GNAI2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GNAI2 antibody

ab157204 showing +ve staining in Human normal liver.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab157204).

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

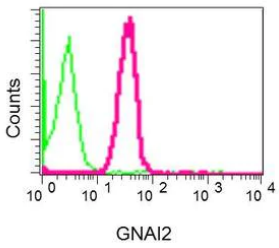


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GNAI2 antibody [EPR9469] - BSA and Azide free (ab240140)

GNAI2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GNAI2 antibody

ab157204 showing +ve staining in Human normal brain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab157204).

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-GNAI2 antibody [EPR9469] - BSA and Azide free (ab240140)

GNAI2 Flow Cytometry (Intracellular) staining using rabbit Anti-GNAI2 antibody

Intracellular Flow Cytometry analysis of permeabilized U937 cells labeling GNAI2 (red), using ab157204 at a 1/10 dilution, and negative control cells probed with a Rabbit IgG (green)
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab157204).

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