

GNAI1 / Gi Antibody (clone R4.5)
Mouse Monoclonal Antibody
Catalog # ALS12313**Specification**

GNAI1 / Gi Antibody (clone R4.5) - Product Information

Application	WB, IHC-P
Primary Accession	P63096
Reactivity	Human, Mouse, Rat, Bovine, Guinea Pig
Host	Mouse
Clonality	Monoclonal
Calculated MW	40kDa KDa
Dilution	WB~~1:1000 IHC-P~~N/A

GNAI1 / Gi Antibody (clone R4.5) - Additional Information**Gene ID** 2770**Other Names**

Guanine nucleotide-binding protein G(i) subunit alpha-1, Adenylate cyclase-inhibiting G alpha protein, GNAI1

Target/Specificity

Recognizes Rat Gai1. Does not cross-react with Transducin, Gao, Gai2, Gai3, or Gas.
ADP-ribosylation of ai1 proteins does not alter the reactivity. Species cross-reactivity: mouse, bovine, guinea pig and human.

Reconstitution & Storage

Long term: -20°C; Short term: +4°C. Avoid repeat freeze-thaw cycles.

Precautions

GNAI1 / Gi Antibody (clone R4.5) is for research use only and not for use in diagnostic or therapeutic procedures.

GNAI1 / Gi Antibody (clone R4.5) - Protein Information**Name** GNAI1**Function**

Guanine nucleotide-binding proteins (G proteins) function as transducers downstream of G protein-coupled receptors (GPCRs) in numerous signaling cascades (PubMed:18434541, PubMed:33762731, PubMed:34239069, PubMed:35610220, PubMed:37935376, PubMed:37935377, PubMed:37963465, PubMed:38552625, PubMed:8774883, PubMed:38918398). The alpha chain contains the guanine nucleotide binding site and alternates between an active, GTP-bound state and an inactive, GDP-bound state (PubMed:18434541, PubMed:8774883). Signaling by an activated GPCR promotes GDP release and GTP binding (PubMed:18434541, PubMed:8774883). The alpha subunit has a low GTPase activity that converts bound GTP to GDP, thereby terminating the signal (PubMed:18434541, PubMed:8774883). Both GDP release and GTP hydrolysis are modulated by numerous regulatory proteins (PubMed:18434541, PubMed:8774883). 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 (PubMed:8119955). The inactive GDP-bound form prevents the association of RGS14 with centrosomes and is required for the translocation of RGS14 from the cytoplasm to the plasma membrane. Required for normal cytokinesis during mitosis (PubMed:17635935). Required for cortical dynein-dynactin complex recruitment during metaphase (PubMed:22327364).

Cellular Location

Nucleus {ECO:0000250|UniProtKB:P10824}. Cytoplasm. Cell membrane; Peripheral membrane protein {ECO:0000250|UniProtKB:P10824}; Cytoplasmic side {ECO:0000250|UniProtKB:P10824}. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cell cortex. Membrane {ECO:0000250|UniProtKB:P10824}; Lipid-anchor Note=Localizes in the centrosomes of interphase and mitotic cells, but not in centrosomes during cytokinesis. Detected at the cleavage furrow or the midbody (PubMed:17635935). Localized at the plasma membrane throughout mitosis. Colocalizes with RIC8A and RGS14 at the plasma membrane. {ECO:0000250|UniProtKB:P10824, ECO:0000269|PubMed:17635935}

Volume

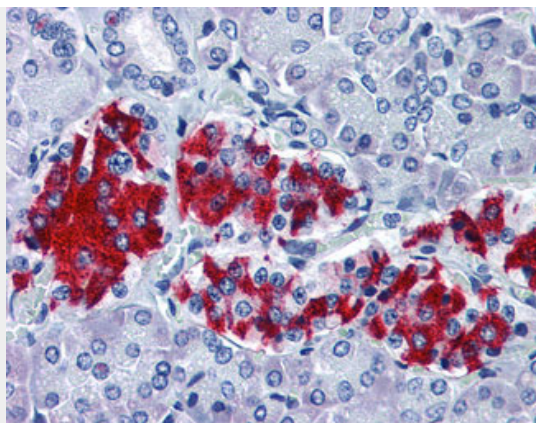
125 µl

GNAI1 / Gi Antibody (clone R4.5) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

GNAI1 / Gi Antibody (clone R4.5) - Images



Anti-GNAI1 antibody IHC of human pancreas.

GNAI1 / Gi Antibody (clone R4.5) - Background

Guanine nucleotide-binding proteins (G proteins) are involved as modulators or transducers in various transmembrane signaling systems. The G(i) proteins are involved in hormonal regulation of adenylate cyclase: they inhibit the cyclase in response to beta-adrenergic stimuli. The inactive GDP-bound form prevents the association of RGS14 with centrosomes and is required for the translocation of RGS14 from the cytoplasm to the plasma membrane. May play a role in cell division.

GNAI1 / Gi Antibody (clone R4.5) - References

Puhl H.L. III,et al.Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
Yu W.,et al.Submitted (MAR-1998) to the EMBL/GenBank/DDBJ databases.
Wiemann S.,et al.Genome Res. 11:422-435(2001).
Kalnine N.,et al.Submitted (OCT-2004) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).