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GNAI1 / Gi Antibody (clone R4.5)

Mouse Monoclonal Antibody
Catalog # ALS12313

Specification

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

Application	**IHC**
Primary Accession	P63096
Reactivity	**Human, Mouse, Rat, Bovine, Guinea Pig**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**40kDa KDa**

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. The alpha chain contains the guanine nucleotide binding site and alternates between an active, GTP-bound state and an inactive, GDP-bound state. Signaling by an activated GPCR promotes GDP release and GTP binding. 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:8774883, PubMed:18434541). Signaling is mediated via effector proteins, such as adenylate cyclase. Inhibits adenylate cyclase activity, leading to decreased intracellular cAMP levels (By

similarity). 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}

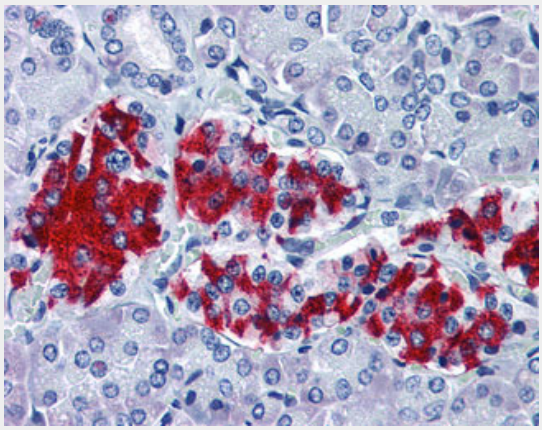
Volume
125 µl

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 Cytomety
- 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).