GNAI1 Blocking Peptide

PRODUCT OVERVIEW

Product Name	GNAI1, Blocking Peptide
Full Product Name	GNAI1 Peptide
Product Gene Name	GNAI1 blocking peptide
Product Synonym Gene Name	Gi
Form/Format	Lyophilized powder
Preparation and Storage	Add 100ul of sterile PBS. Final peptide concentration is 1 mg/ml in PBS. For longer periods of storage, store at -20 degree C. Avoid repeat freeze-thaw cycles.
Antibody/Peptide Pairs	GNAI1 peptide (MBS3236722) is used for blocking the activity of GNAI1 antibody (MBS3211774)
Molecular Weight	40kDa
OMIM	139310
Product Categories/Family for GNAI1 blocking peptide	Peptide
Applications Tested/Suitable for GNAI1 blocking peptide	Western Blot (WB)
Related Product Information for GNAI1 blocking peptide	This is a synthetic peptide designed for use in combination with anti-GNAI1 antibody made Target Description: Guanine nucleotide-binding proteins (G proteins) form a large family of signal-transducing molecules. They are found as heterotrimers made up of alpha, beta, and gamma subunits. Members of the G protein family have been characterized most extensively on the basis of the alpha subunit, which binds guanine nucleotide, is capable of hydrolyzing GTP, and interacts with specific receptor and effector molecules. The G protein family includes Gs and Gi, the stimulatory and inhibitory GTP-binding regulators of adenylate cyclase; Go, a protein abundant in brain (GNAO1); and transducin-1 (GNAT1) and transducin-2 (GNAT2), proteins involved in phototransduction in retinal rods and cones, respectively.Guanine nucleotide-binding proteins (G proteins) form a large family of signal-transducing molecules. They are found as heterotrimers made up of alpha, beta, and gamma subunits. Members of the G protein family have been characterized most extensively on the basis of the alpha subunit, which binds guanine nucleotide, is capable of hydrolyzing GTP, and interacts with specific receptor and effector molecules. The G protein family includes Gs (MIM 139320) and Gi, the stimulatory and inhibitory GTP-binding regulators of adenylate cyclase; Go, a protein abundant in brain (GNAO1; MIM 139311); and transducin-1 (GNAT1; MIM 139330) and transducin-2 (GNAT2; MIM 139340), proteins involved in phototransduction in retinal rods and cones, respectively (Sullivan et al., 1986 [PubMed 3092218]; Bray et al., 1987 [PubMed 3110783]). Suki et al. (1987) [PubMed 2440724] concluded that the human genome contains at least 3 nonallelic genes for alpha-i-type subunits of G protein; see, e.g, GNAI2 (MIM 139360), GNAI3 (MIM 139370), and GNAIH (MIM 139180).[supplied by OMIM]. Sequence Note: The RefSeq transcript and protein were derived from genomic sequence to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on alignments. Publication Note: This RefSeq record includes a subset of the publications that are available for this gene. Please see the Entrez Gene record to access additional publications.
Other Notes	Small volumes of GNAI1 blocking peptide vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for GNAI1 purchase	MBS3236722 is a blocking peptide targeting GNAI1. Also known as GNAI1 Peptide.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for GNAI1. It may not necessarily be applicable to this product.

NCBI GI #	33946324
NCBI GeneID	2770
NCBI Accession #	NP_002060
UniProt Primary Accession #	P63096
UniProt Related Accession #	P63096
GenBank Nucleotide #	NM_002069
NCBI Official Full Name	guanine nucleotide-binding protein G(i) subunit alpha-1 isoform 1
NCBI Official Synonym Full Names	G protein subunit alpha i1
NCBI Official Symbol	GNAI1
NCBI Official Synonym Symbols	Gi
UniProt Protein Name	Guanine nucleotide-binding protein G(i) subunit alpha-1
UniProt Synonym Protein Names	Adenylate cyclase-inhibiting G alpha protein
UniProt Gene Name	GNAI1
UniProt Entry Name	GNAI1_HUMAN
NCBI Protein Information	guanine nucleotide-binding protein G(i) subunit alpha-1
NCBI Summary for GNAI1	Guanine nucleotide binding proteins are heterotrimeric signal-transducing molecules consisting of alpha, beta, and gamma subunits. The alpha subunit binds guanine nucleotide, can hydrolyze GTP, and can interact with other proteins. The protein encoded by this gene represents the alpha subunit of an inhibitory complex. The encoded protein is part of a complex that responds to beta-adrenergic signals by inhibiting adenylate cyclase. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jan 2012]
UniProt Comments for GNAI1	G-alpha i1: 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. Interacts with GPSM1. Interacts with RGS12. Interacts (via active GTP- or inactive GDP-bound forms) with RGS14 (via RGS and GoLoco domains); the interaction occurs in the centrosomes. Interacts (GDP-bound form) with RIC8A (via C-terminus). Interacts with DRD2. G proteins are composed of 3 units; alpha, beta and gamma. The alpha chain contains the guanine nucleotide binding site. Belongs to the G-alpha family. G(i/o/t/z) subfamily. Protein type: G protein, heterotrimeric; G protein, heterotrimeric alpha G((i/o/t/z)); G protein Chromosomal Location of Human Ortholog: 7q21 Cellular Component: centrosome; lysosomal membrane; cytoplasm; plasma membrane; heterotrimeric G-protein complex; midbody; nucleus Molecular Function: GTPase activity; signal transducer activity; protein binding; GTP binding; metal ion binding; G-protein beta/gamma-subunit binding; metabotropic serotonin receptor binding Biological Process: G-protein signaling, coupled to cAMP nucleotide second messenger; G-protein coupled receptor protein signaling pathway; response to peptide hormone stimulus; platelet activation; synaptic transmission; cell division; metabolic process; G-protein signaling, adenylate cyclase inhibiting pathway; blood coagulation; cell cycle
Research Articles on GNAI1	**1.** 3.5 A resolution cryo-electron microscopy structure of the mu-opioid receptor (muOR) bound to the agonist peptide DAMGO and nucleotide-free Gi; these results shed light on the structural features that contribute to the Gi protein-coupling specificity of the microOR

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