10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

RGS14 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP56025

Product Information

Application	WB, IHC-P, IHC-F, IF, ICC, E
Primary Accession	O43566
Reactivity	Rat, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	61447
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human RGS14
Epitope Specificity	151-250/566
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Nucleus (By similarity). Nucleus, PML body (By similarity). Cytoplasm. Membrane (By similarity). Cell membrane (By similarity). Cytoplasm, cytoskeleton, centrosome (By similarity). Cytoplasm, cytoskeleton, spindle. Cytoplasm, cytoskeleton, spindle pole (By similarity). Cell projection, dendrite (By similarity). Cell projection, dendritic spine (By similarity). Cell junction, synapse, postsynaptic cell membrane, postsynaptic density (By similarity). Note=Associates with the perinuclear sheaths of microtubules (MTs) surrounding the pronuclei, prior to segregating to the anastral mitotic apparatus and subsequently the barrel-shaped cytoplasmic bridge between the nascent nuclei of the emerging 2-cell embryo. Localizes to a perinuclear compartment near the microtubule-organizing center (MTOC). Expressed in the nucleus during interphase and segregates to the centrosomes and astral MTs during mitosis. Relocalizes to the nucleus in PML nuclear bodies in response to heat stress. Colocalizes with RIC8A in CA2 hippocampal neurons. Localizes to spindle poles during metaphase. Shuttles between the nucleus and cytoplasm in a CRM1-dependent manner. Recruited from the cytosol to the plasma membrane by the inactive GDP-bound forms of G(i) alpha subunits GNAI1 and GNAI3. Recruited from the cytosol to membranes by the active GTP-bound form of HRAS1. Colocalizes with G(i) alpha subunit GNAI1 and RIC8A at the plasma membrane. Colocalizes with BRAF and RAF1 in both the cytoplasm and membranes (By similarity).
SIMILARITY	Contains 1 GoLoco domain.Contains 2 RBD (Ras-binding) domains.Contains 1 RGS domain.
SUBUNIT	Interacts with GNAO1 and GNAI2. Interacts (via RGS and GoLoco domains) GNAI1; the interaction occurs in the centrosomes. Interacts with RABGEF1; the interactions is GTP-dependent. Interacts with RAP2A; the interactions is GTP-dependent and does not alter its function on G(i) alpha subunits either as GAP or as GDI. Associates with microtubules. Found in a complex with at least BRAF, HRAS1, MAP2K1, MAPK3 and RGS14. Interacts with RIC8A (via C-terminus). Interacts (via RBD 1 domain) with HRAS1 (active GTP-bound form preferentially). Interacts (via RBD domains) with BRAF (via N-terminus); the

	interaction mediates the formation of a ternary complex with RAF1. Interacts (via RBD domains) with RAF1 (via N-terminus); the interaction mediates the formation of a ternary complex with BRAF. Interacts with KRAS (active GTP-bound form preferentially), MRAS (active GTP-bound form preferentially), NRAS (active GTP-bound form preferentially) and RRAS (active GTP-bound form preferentially). Interacts with GNAI1 (via active GTP-or inactive GDP-bound forms); the interaction prevents association of RGS14 with centrosomes or nuclear localization. Interacts with GNAI2. Interacts with GNAI3 (via active GTP- or inactive GDP-bound forms); the interaction prevents association of RGS14 with centrosomes or nuclear localization (By similarity). Associates with microtubules.
Post-translational modifications	Phosphorylated by PKC. Phosphorylation is increased in presence of forskolin and may enhance the GDI activity on G(i) alpha subunit GNAI1 (By similarity).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a member of the regulator of G-protein signaling family. This protein contains one RGS domain, two Raf-like Ras-binding domains (RBDs), and one GoLoco domain. The protein attenuates the signaling activity of G-proteins by binding, through its GoLoco domain, to specific types of activated, GTP-bound G alpha subunits. Acting as a GTPase activating protein (GAP), the protein increases the rate of conversion of the GTP to GDP. This hydrolysis allows the G alpha subunits to bind G beta/gamma subunit heterodimers, forming inactive G-protein heterotrimers, thereby terminating the signal. Alternate transcriptional splice variants of this gene have been observed but have not been thoroughly characterized. [provided by RefSeq, Jul 2008].

Additional Information

Gene ID	10636
Other Names	Regulator of G-protein signaling 14, RGS14, RGS14
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,ICC=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

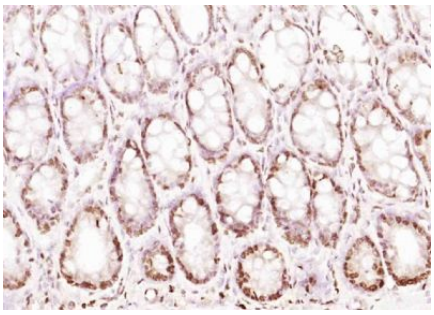
Name	RGS14
Function	Regulates G protein-coupled receptor signaling cascades. Inhibits signal transduction by increasing the GTPase activity of G protein alpha subunits, thereby driving them into their inactive GDP- bound form. Besides, modulates signal transduction via G protein alpha subunits by functioning as a GDP-dissociation inhibitor (GDI). Has GDI activity on G(i) alpha subunits GNAI1 and GNAI3, but not on GNAI2 and G(o)-alpha subunit GNAO1. Has GAP activity on GNAI0, GNAI2 and GNAI3. May act as a scaffold integrating G protein and Ras/Raf MAPkinase signaling pathways. Inhibits platelet-derived growth factor (PDGF)- stimulated ERK1/ERK2 phosphorylation; a process depending on its interaction with HRAS and that is reversed by G(i) alpha

subunit GNAI1. Acts as a positive modulator of microtubule polymerisation and spindle organization through a G(i)-alpha-dependent mechanism. Plays a role in cell division. Required for the nerve growth factor (NGF)-mediated neurite outgrowth. Involved in stress resistance. May be involved in visual memory processing capacity and hippocampal-based learning and memory.

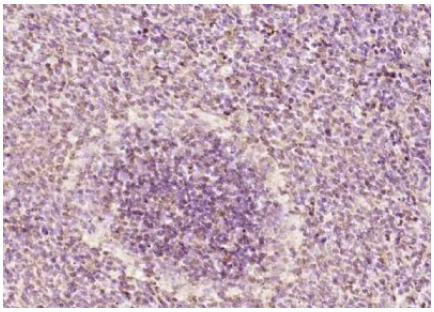
Cellular Location

Nucleus. Nucleus, PML body. Cytoplasm. Membrane. Cell membrane. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle. Cytoplasm, cytoskeleton, spindle pole. Cell projection, dendrite. Cell projection, dendritic spine Postsynaptic density. Note=Associates with the perinuclear sheaths of microtubules (MTs) surrounding the pronuclei, prior to segregating to the anastral mitotic apparatus and subsequently the barrel-shaped cytoplasmic bridge between the nascent nuclei of the emerging 2-cell embryo. Localizes to a perinuclear compartment near the microtubule-organizing center (MTOC). Expressed in the nucleus during interphase and segregates to the centrosomes and astral MTs during mitosis. Relocalizes to the nucleus in PML nuclear bodies in response to heat stress. Colocalizes with RIC8A in CA2 hippocampal neurons Localizes to spindle poles during metaphase. Shuttles between the nucleus and cytoplasm in a CRM1-dependent manner. Recruited from the cytosol to the plasma membrane by the inactive GDP-bound forms of G(i) alpha subunits GNAI1 and GNAI3. Recruited from the cytosol to membranes by the active GTP-bound form of HRAS. Colocalizes with G(i) alpha subunit GNAI1 and RIC8A at the plasma membrane. Colocalizes with BRAF and RAF1 in both the cytoplasm and membranes (By similarity)

Images

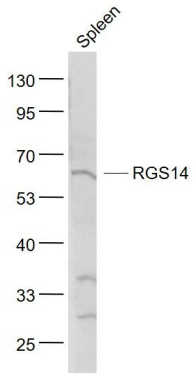


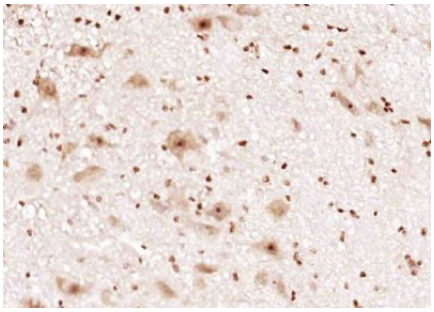
Paraformaldehyde-fixed, paraffin embedded (rat colon); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (RGS14) Polyclonal Antibody, Unconjugated (AP56025) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.



Paraformaldehyde-fixed, paraffin embedded (rat spleen); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (RGS14) Polyclonal Antibody, Unconjugated (AP56025) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

Sample:
Spleen (Mouse) Lysate at 40 ug
Primary: Anti- RGS14 (AP56025) at 1/1000 dilution
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution
Predicted band size: 61 kD
Observed band size: 61 kD





Paraformaldehyde-fixed, paraffin embedded (mouse cerebellum); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (RGS14) Polyclonal Antibody, Unconjugated (AP56025) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.