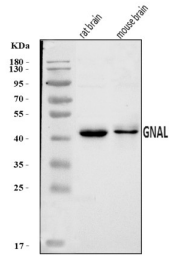
GNAL Antibody / Guanine Nucleotide-Binding Protein G(olf) Subunit Alpha Antibody (FY13502)

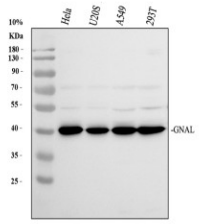
Catalog No.	Formulation	Size
FY13502	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

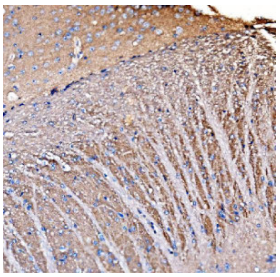
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen Affinity
Buffer	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4
UniProt	P38405
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This GNAL Antibody / Guanine Nucleotide-Binding Protein G(olf) Subunit Alpha Antibody is available for research use only.



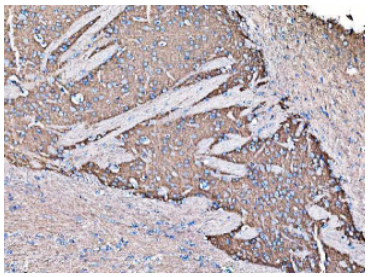
GNAL Antibody Mouse and Rat Brain WB. Western blot analysis of GNAL in rat and mouse brain tissue lysates using GNAL Antibody. Samples (30 ug/lane) were separated by 5-20% SDS-PAGE under reducing conditions and transferred to nitrocellulose. Lane 1: rat brain; Lane 2: mouse brain. The membrane was blocked with 5% non-fat milk/TBS and incubated with the antibody at 0.5 ug/ml overnight at 4Â°C, followed by HRP-conjugated goat anti-rabbit IgG and ECL detection. A specific band was detected at approximately 44 kDa, consistent with the expected molecular weight of GNAL. This GNAL Antibody detects G(olf) alpha in mouse and rat brain tissue for studies of neuronal G protein signaling.



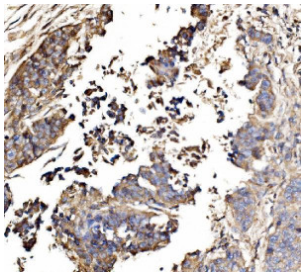
GNAL Antibody Human Cancer Cell WB. Western blot analysis of GNAL in human cell lysates using GNAL Antibody. Samples (30 ug/lane) were separated by 10% SDS-PAGE under reducing conditions and transferred to nitrocellulose. Lane 1: HeLa; Lane 2: U2OS; Lane 3: A549; Lane 4: 293T. The membrane was blocked with 5% non-fat milk/TBS and incubated with the antibody at 0.5 ug/ml overnight at 4Â°C, followed by HRP-conjugated goat anti-rabbit IgG and ECL detection. A specific band was detected at approximately 44 kDa, consistent with the expected molecular weight of GNAL. This GNAL Antibody detects G(olf) alpha in multiple human cell lines for studies of G protein-mediated signaling.



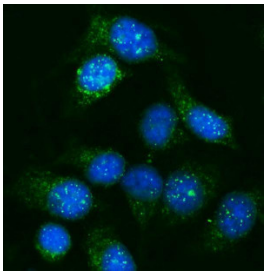
GNAL Antibody Mouse Brain IHC. IHC staining of FFPE mouse brain tissue using GNAL Antibody. Heat-induced epitope retrieval was performed in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. The tissue was incubated with the antibody at 2 ug/ml overnight at 4Â°C, followed by biotinylated goat anti-rabbit IgG and SABC/DAB detection. Positive GNAL staining is observed in brain tissue. This GNAL Antibody demonstrates G(olf) alpha expression in mouse brain, supporting studies of neuronal G protein signaling and motor pathway biology.



GNAL Antibody Rat Brain IHC. IHC staining of FFPE rat brain tissue using GNAL Antibody. Heat-induced epitope retrieval was performed in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. The tissue was incubated with the antibody at 2 ug/ml overnight at 4Â°C, followed by biotinylated goat anti-rabbit IgG and SABC/DAB detection. Positive GNAL staining is observed in brain tissue. This GNAL Antibody demonstrates G(olf) alpha expression in rat brain, supporting studies of neuronal G protein signaling and motor pathway biology.



GNAL Antibody Human Lung Cancer IHC. IHC staining of FFPE human lung cancer tissue using GNAL Antibody. Heat-induced epitope retrieval was performed in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. The tissue was incubated with the antibody at 2 ug/ml overnight at 4Â°C, followed by biotinylated goat anti-rabbit IgG and SABC/DAB detection. Positive GNAL staining is observed in tumor cells. This GNAL Antibody demonstrates G(olf) alpha expression in human lung cancer tissue, supporting research into G protein-mediated signaling.



GNAL Antibody HeLa Cell IF. Immunofluorescence staining of fixed human HeLa cells using GNAL Antibody. Enzyme antigen retrieval was performed for 15 minutes, followed by blocking with 10% goat serum. Cells were incubated with the antibody at 5 ug/ml overnight at 4Â°C, followed by DyLight 488-conjugated goat anti-rabbit IgG at 1:100 for 30 minutes at 37Â°C. Nuclei were counterstained with DAPI (blue). GNAL staining (green) is observed predominantly in the cytoplasm with a punctate distribution. This GNAL Antibody detects G(olf) alpha in human cells for studies of G protein-mediated signaling.

Description

GNAL Antibody / Guanine Nucleotide-Binding Protein G(olf) Subunit Alpha Antibody recognizes a member of the heterotrimeric guanine nucleotide-binding protein family that participates in signal transduction downstream of G protein-coupled receptors. GNAL encodes the G(olf) alpha subunit, a stimulatory G protein alpha subunit closely related to GNAS-encoded G alpha s. G(olf) alpha couples activated receptors to downstream effector pathways, particularly adenylyl cyclase signaling and the generation of cyclic AMP. The protein is best known for its roles in olfactory sensory transduction and neuronal signaling within specific regions of the central nervous system.

In the olfactory system, GNAL is prominently associated with olfactory receptor signaling. Following odorant binding to an olfactory receptor, activation of G(olf) promotes stimulation of adenylyl cyclase III, increasing intracellular cyclic AMP and contributing to activation of cyclic nucleotide-gated ion channels. This signaling cascade converts odorant receptor activation into an electrical response in olfactory sensory neurons. A GNAL Antibody can therefore support research examining the molecular components of olfactory signaling, sensory transduction and G protein-mediated receptor pathways.

GNAL is also expressed in the brain, with important functions in the striatum and other neuronal populations. G(olf) alpha participates in coupling several GPCRs to adenylyl cyclase, including dopamine D1 receptors and adenosine A2A receptors. These signaling systems contribute to the regulation of neuronal excitability, motor control and basal ganglia function. GNAL therefore provides a molecular connection between receptor activation and cyclic AMP-dependent signaling pathways involved in movement and neuronal communication.

Genetic alterations affecting GNAL have been associated with neurological phenotypes, particularly forms of dystonia. Pathogenic variants can disrupt G(olf)-dependent signaling within striatal pathways and alter signaling networks involved in motor regulation. GNAL has consequently become an important target in studies of movement disorders, basal ganglia biology, dopaminergic signaling and the molecular mechanisms that regulate motor function. Research on GNAL may also help clarify how altered GPCR coupling and cyclic AMP signaling contribute to neuronal dysfunction.

Guanine Nucleotide-Binding Protein G(olf) Subunit Alpha is part of the broader family of heterotrimeric G proteins that translate extracellular receptor signals into intracellular responses. Its distinctive tissue distribution and receptor-coupling functions make it particularly relevant to studies connecting sensory biology with central nervous system signaling. NSJ Bioreagents supplies antibodies to GNAL and related signaling proteins for research into G protein biology, neuronal pathways and receptor-mediated signal transduction. A GNAL Antibody can support investigation of G(olf) alpha expression and its involvement in olfactory transduction, GPCR signaling, dopamine pathways, basal ganglia function and movement-related neuroscience.

For related targets involved in neuronal signaling, basal ganglia function and motor pathway biology, explore our Neuroscience Antibodies page.

Application Notes

Optimal dilution of the GNAL Antibody / Guanine Nucleotide-Binding Protein G(olf) Subunit Alpha Antibody should be determined by the researcher.

Immunogen

E.coli-derived human Guanine Nucleotide-Binding Protein G(olf) Subunit Alpha recombinant protein (amino acids R114-H349) was used as the immunogen for the GNAL Antibody.

Storage

After reconstitution, the GNAL Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

GNAL antibody, Guanine nucleotide-binding protein G(olf) subunit alpha antibody, G(olf) alpha antibody, Golf alpha antibody, G alpha olf antibody, GNASL antibody

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