RGL3 Antibody / Ral guanine nucleotide dissociation stimulator-like 3 (FY13318)

Catalog No.	Formulation	Size
FY13318	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q3MIN7
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RGL3 antibody is available for research use only.

Description

RGL3 antibody recognizes Ral guanine nucleotide dissociation stimulator-like 3, a cytoplasmic guanine nucleotide exchange factor (GEF) encoded by the RGL3 gene on chromosome 19q13.33. RGL3 is a member of the RalGDS-like family of Ras effector proteins that mediate cross-talk between Ras and Ral small GTPase signaling pathways. RGL3 functions as a guanine nucleotide exchange factor that activates RalA and RalB by promoting the exchange of GDP for GTP, thus regulating vesicle trafficking, cytoskeletal organization, and cell proliferation.

RGL3 antibody identifies a multifunctional signaling adaptor that localizes primarily to the cytoplasm and cell membrane, where it interacts with active GTP-bound Ras. Through its Ras-binding domain (RBD) and pleckstrin homology (PH) domain, RGL3 serves as a molecular bridge linking Ras activation to downstream Ral-mediated signaling. This pathway plays critical roles in exocytosis, endocytosis, and integrin-dependent cell migration. Structural analyses reveal that RGL3 possesses distinct domains for Ras and phospholipid interactions, allowing it to coordinate spatial and temporal aspects

of Ral signaling.

Functionally, RGL3 participates in pathways controlling cytoskeletal remodeling and membrane trafficking. Activated RGL3 promotes the assembly of Ral effector complexes involved in vesicle tethering and actin reorganization. In epithelial cells, it contributes to junction formation and cell polarity maintenance. The Ral signaling axis, modulated by RGL3, influences diverse cellular functions including autophagy, exosome release, and oncogenic transformation.

RGL3 is transcriptionally regulated by growth factors and mitogenic stimuli, positioning it as an important node in the Ras-MAPK signaling network. Dysregulation of RGL3 expression or activity has been linked to cancer progression, metastasis, and neurological disorders. Overactivation of the Ral GTPase pathway through RGL3 can enhance tumor cell migration and invasion, particularly in pancreatic and lung cancers. Conversely, loss of RGL3 function can impair vesicular transport and disrupt cell adhesion dynamics.

At the pathway level, RGL3 participates in Ras and Ral GTPase signaling cascades, which intersect with PI3K and MAPK pathways to control cell survival and differentiation. Evolutionarily, RGL3 belongs to the RalGDS family of guanine nucleotide exchange factors, sharing homology with RGL1, RGL2, and RalGPS proteins. The proteinÂ's regulatory domains ensure precise spatiotemporal activation of Ral GTPases in response to external stimuli.

Immunohistochemical analysis using RGL3 antibody shows cytoplasmic and membrane localization in epithelial and neuronal cells, consistent with its role in Ras-dependent signaling. RGL3 antibody from NSJ Bioreagents is a useful reagent for exploring Ral GTPase activation, vesicle transport, and oncogenic Ras signaling in developmental and cancer models.

Application Notes

Optimal dilution of the RGL3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human RGL3 recombinant protein (Position: Q49-D622) was used as the immunogen for the RGL3 antibody.

Storage

After reconstitution, the RGL3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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