

GKAP1 Antibody / G kinase-anchoring protein 1 (FY12580)

| Catalog No. | Formulation | Size |
|-------------|--|--------|
| FY12580 | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

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| | |
|---------------------------|--|
| Availability | 1-2 days |
| Species Reactivity | Human, Mouse, Rat |
| 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 Na ₂ HPO ₄ . |
| UniProt | Q5VSY0 |
| Applications | ELISA : 0.1-0.5ug/ml Flow Cytometry : 1-3ug/million cells Western Blot : 0.25-0.5ug/ml |
| Limitations | This GKAP1 antibody is available for research use only. |

Description

GKAP1 antibody detects G kinase-anchoring protein 1, a scaffold protein that coordinates the localization and activity of cGMP-dependent protein kinase (PKG) signaling complexes. GKAP1 serves as a key adaptor linking kinases, phosphatases, and cytoskeletal elements, thereby influencing cellular responses to cyclic nucleotide signaling. The GKAP1 antibody is widely used in cardiovascular, renal, and neurobiology research to study cGMP signaling pathways and subcellular kinase organization.

GKAP1 is encoded by the GKAP1 gene located on human chromosome 9q31.1. The protein is approximately 96 kilodaltons and characterized by multiple ankyrin repeats and leucine zipper motifs that mediate protein-protein interactions. It functions as an anchoring protein for PKG, positioning the kinase in proximity to its substrates at specific subcellular compartments, including the cytoskeleton and plasma membrane. This compartmentalization ensures spatial precision in cGMP-mediated signaling events.

The GKAP1 antibody detects a 96 kilodalton band by western blot and shows cytoplasmic and perinuclear localization under immunofluorescence. GKAP1 binds directly to PKG I and II isoforms, facilitating phosphorylation of target proteins involved in smooth muscle relaxation, ion channel regulation, and metabolic control. Through its anchoring role, GKAP1

contributes to compartmentalized cGMP signaling, distinguishing localized kinase activity from global cyclic nucleotide effects.

Beyond its role in vascular signaling, GKAP1 participates in neuronal signaling and synaptic plasticity. It interacts with cytoskeletal proteins and actin-regulatory molecules, influencing axon growth and dendritic morphology. GKAP1 may also modulate insulin signaling and energy metabolism through PKG-mediated pathways in adipocytes and hepatocytes.

Dysregulation of GKAP1 expression alters cGMP signaling fidelity and is associated with cardiovascular disorders, hypertension, and metabolic diseases. Overexpression enhances PKG activity and smooth muscle relaxation, whereas loss of GKAP1 results in impaired vasodilation and reduced cellular responsiveness to nitric oxide. Because of its central role in cGMP signaling scaffolding, GKAP1 represents a valuable target for understanding kinase compartmentalization and cyclic nucleotide signaling networks.

NSJ Bioreagents provides a validated GKAP1 antibody optimized for western blot, immunocytochemistry, and protein interaction studies, supporting research into kinase anchoring, cGMP signaling, and subcellular signal organization.

Application Notes

Optimal dilution of the GKAP1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GKAP1 recombinant protein (Position: E69-R366) was used as the immunogen for the GKAP1 antibody.

Storage

After reconstitution, the GKAP1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.