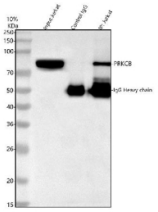
PKC beta Antibody / PRKCB (R31732)

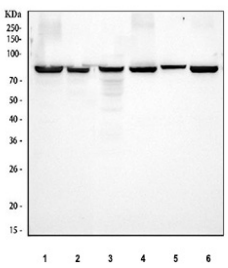
Catalog No.	Formulation	Size
R31732	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

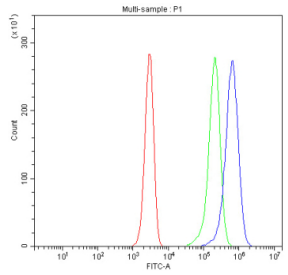
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P05771
Applications	Western Blot : 0.5-1ug/ml Immunoprecipitation : 2ug for 500ug of lysate Flow Cytometry : 1-3ug/million cells
Limitations	This PKC beta antibody is available for research use only.



Immunoprecipitation of PKC beta protein from 500ug of human Jurkat whole cell lysate with 2ug of PKC beta antibody. Predicted molecular weight ~76 kDa.



Western blot testing of 1) human K562, 2) human HEL, 3) human Jurkat, 4) rat brain, 5) rat PC-12 and 6) mouse brain tissue lysate with PKC beta antibody. Predicted molecular weight ~76 kDa.



Flow cytometry analysis of fixed and permeabilized human Jurkat cells with PKC beta antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= PKC beta antibody.

Description

PKC beta antibody targets Protein kinase C beta, encoded by the PRKCB gene. Protein kinase C beta is a member of the conventional PKC subfamily of serine-threonine kinases that are activated by diacylglycerol and calcium in response to receptor-mediated signaling. PKC beta functions as an important signal transducer linking extracellular stimuli to intracellular pathways that regulate cell activation, proliferation, differentiation, and survival. The protein is primarily localized in the cytoplasm under resting conditions and translocates to cellular membranes upon activation, where it phosphorylates downstream substrates.

Functionally, Protein kinase C beta plays a central role in regulating signaling cascades downstream of growth factor receptors, immune receptors, and G protein-coupled receptors. Activation of PKC beta influences multiple cellular processes, including regulation of gene expression, cytoskeletal dynamics, vesicle trafficking, and metabolic responses. PKC beta signaling is particularly important in immune cells, where it modulates B cell receptor signaling, activation, and differentiation. A PKC beta antibody supports studies focused on kinase signaling and stimulus-dependent signal transduction pathways.

PRKCB expression is widespread, with notable enrichment in hematopoietic cells, brain, vascular tissues, and metabolic organs. In the immune system, PKC beta is highly expressed in B lymphocytes and contributes to adaptive immune responses. In the nervous system, PKC beta participates in neuronal signaling and synaptic regulation. Expression and activity of PKC beta are dynamically regulated by cellular activation state and intracellular second messenger levels, reflecting its role as a responsive signaling mediator.

From a disease-relevance perspective, dysregulation of PKC beta activity has been implicated in cancer, cardiovascular disease, metabolic disorders, and immune dysfunction. Aberrant PKC beta signaling has been associated with B cell malignancies, diabetic vascular complications, and inflammatory conditions. PKC beta has also been explored as a therapeutic target due to its involvement in pathological signaling pathways that drive disease progression. These associations highlight the importance of PKC beta in studies of disease-associated signal transduction.

At the molecular level, Protein kinase C beta contains conserved regulatory domains that bind calcium and diacylglycerol, as well as a C-terminal kinase domain responsible for substrate phosphorylation. Alternative splicing and post-translational modifications contribute to isoform diversity and can influence activation state, localization, and electrophoretic behavior on SDS-PAGE. A PKC beta antibody supports research applications focused on intracellular signaling, immune cell biology, and disease-related kinase regulation, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the PKC beta antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

Human partial recombinant protein (AA 542-671) was used as the immunogen for this PKC beta antibody.

Storage

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