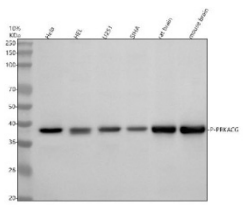
Phospho-PKA C (pThr197) Antibody / PRKACA/PRKACB/PRKACG [clone 32P41] (FY13272)

Catalog No.	Formulation	Size
FY13272	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

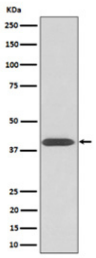
Recombinant RABBIT MONOCLONAL

Bulk quote request

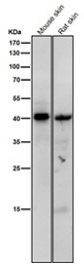
Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	32P41
Purity	Affinity-chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P22612, P17612, P22694
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200
Limitations	This Phospho-PKA C (pThr197) antibody is available for research use only.



Western blot analysis of P-PRKA/C/G using anti-Phospho-PKA C (pThr197) antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human HEL whole cell lysates, Lane 3: human U251 whole cell lysates, Lane 4: human SIHA whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Phospho-PKA C (Thr197) antibody at 1:500 overnight at 4oC, then washed with TBS-10%%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. The predicted molecular weight of P-PRKA/C/G is ~40 kDa.



Western blot analysis of extracts from human HeLa cells, using Phospho-PKA C (pThr197) antibody. The predicted molecular weight of P-PRKA/C/G is ~40 kDa.



Western blot testing of mouse and rat skin tissue lysate using the Phospho-PKA C (pThr197) antibody at 1:1000 dilution for 1 hour at room temperature. The predicted molecular weight of P-PRKA/C/G is ~40 kDa.

Description

Phospho-PKA C (pThr197) antibody detects Protein kinase A catalytic subunit phosphorylated at threonine 197, encoded by PRKACA, PRKACB, and PRKACG. Protein kinase A catalytic subunit is the enzymatic component of the cAMP-dependent protein kinase holoenzyme, which regulates metabolism, growth, and gene expression. Phosphorylation at threonine 197 is required for full activation of the catalytic subunit. Phospho-PKA C (pThr197) antibody provides researchers with a highly specific reagent to study activation of PKA signaling in multiple biological systems.

Protein kinase A catalytic subunit is activated when cAMP binds regulatory subunits, releasing the catalytic subunits into the cytoplasm. Research using Phospho-PKA C (Thr197) antibody has demonstrated that phosphorylation at threonine 197 occurs within the activation loop and is necessary for stabilizing the active conformation. This phosphorylation is typically mediated by phosphoinositide-dependent kinase 1 and ensures robust catalytic activity toward downstream substrates. Without this modification, kinase activity is impaired, highlighting its essential role in PKA signaling.

Studies with Phospho-PKA C (pThr197) antibody have revealed that phosphorylation of the catalytic subunit regulates diverse cellular processes. These include glycogen metabolism, lipolysis, ion channel regulation, and transcriptional activation. PKA phosphorylates transcription factors such as CREB, influencing gene expression programs in response to hormonal and metabolic signals. By monitoring phosphorylation at Thr197, researchers gain insight into dynamic activation of cAMP-dependent signaling.

Dysregulation of PKA phosphorylation has been linked to disease. Research using Phospho-PKA C (Thr197) antibody has shown that abnormal activity contributes to endocrine disorders, cardiovascular disease, and cancer. Mutations in PRKACA are associated with adrenal hyperplasia and Cushing's syndrome, conditions characterized by excessive PKA signaling. In oncology, altered phosphorylation of PKA subunits affects cell proliferation and survival, supporting tumor growth. These findings emphasize the importance of Thr197 phosphorylation in physiology and pathology.

Phospho-PKA C (pThr197) antibody is widely applied in western blotting, immunohistochemistry, and immunofluorescence. Western blotting distinguishes active phosphorylated subunits, immunohistochemistry highlights activated kinase in tissues, and immunofluorescence demonstrates localization of phosphorylated subunits in response to stimuli. These applications make Phospho-PKA C (Thr197) antibody an indispensable tool in signaling research.

By supplying validated Phospho-PKA C (pThr197) antibody reagents, NSJ Bioreagents supports studies into kinase signaling, endocrine biology, and cancer. Detection of phosphorylation at threonine 197 in PRKACA, PRKACB, and PRKACG provides a precise marker of Protein kinase A catalytic activity.

Application Notes

Optimal dilution of the Phospho-PKA C (pThr197) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-PKA C (pThr197) was used as the immunogen for the Phospho-PKA C (pThr197) antibody.

Storage

Store the Phospho-PKA C (pThr197) antibody at -20oC.

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