Phospho-PKR (pThr451) Antibody / Protein kinase R / EIF2AK2 [clone 32E50] (FY12582)

Catalog No.	Formulation	Size
FY12582	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
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	32E50
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	P19525
Applications	Western Blot : 1:500-1:2000
Limitations	This Phospho-PKR (pThr451) antibody is available for research use only.

Description

Phospho-PKR (pThr451) antibody detects protein kinase R phosphorylated at threonine 451. PKR, encoded by the EIF2AK2 gene, is a serine threonine kinase activated by double stranded RNA during viral infection. Upon activation, PKR undergoes autophosphorylation at Thr451 and other residues, leading to phosphorylation of eukaryotic initiation factor 2 alpha (eIF2alpha). This modification suppresses translation, limiting viral replication and regulating cellular stress responses.

Phospho-PKR (pThr451) antibody is widely applied in virology, immunology, and stress signaling research. By detecting PKR activation, researchers can evaluate how cells respond to viral infection and other stressors such as interferon signaling, oxidative stress, and endoplasmic reticulum stress. Phosphorylation at Thr451 provides a reliable marker of PKR kinase activity and initiation of antiviral defense pathways.

Western blot assays reveal phosphorylated PKR bands distinct from unphosphorylated protein. Immunohistochemistry highlights PKR activation in infected or stressed tissues, while immunofluorescence demonstrates subcellular localization of phospho PKR in cytoplasmic foci and stress granules. These methods provide detailed insight into antiviral signaling and translational control.

PKR phosphorylation at Thr451 integrates innate immunity and apoptosis. Persistent activation induces cell death, contributing to tissue pathology during infection and chronic disease. Dysregulation of PKR activity has been implicated in cancer, metabolic disorders, and neurodegenerative disease. By applying Phospho-PKR (pThr451) antibody, scientists can investigate the balance between protective antiviral signaling and detrimental chronic activation.

PKR also modulates inflammatory pathways including NF-kB activation and cytokine production. Through its ability to couple stress responses to immune activation, PKR influences outcomes in infection, autoimmunity, and tumor immunity. The phospho-specific antibody therefore provides a versatile tool for studying immune regulation and therapeutic targeting.

Phospho-PKR (pThr451) antibody from NSJ Bioreagents offers dependable specificity for monitoring EIF2AK2 activation, supporting high-quality research in virology, oncology, and immunology.

Application Notes

Optimal dilution of the Phospho-PKR (pThr451) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-Phospho-PKR (T451) was used as the immunogen for the Phospho-PKR (pThr451) antibody.

Storage

Store the Phospho-PKR (pThr451) antibody at -20oC.

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