Revision 1

Store at -20C

#3072

PKR Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H	Endogenous	74	Rabbit	#P19525	5610

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

PKR Antibody detects endogenous levels of PKR. This antibody does not cross-react with other related proteins.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Thr451 of human PKR. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Protein kinase R (PKR) is transcriptionally induced by interferon and activated by double-stranded RNA (dsRNA). PKR inhibits translation initiation through phosphorylation of the α subunit of the initiation factor eIF2 (eIF2α) and also controls the activation of several transcription factors, such as NF-κB, p53, and the Stats. In addition, PKR mediates apoptosis induced by many different stimuli, such as LPS, TNF-α, viral infection, and serum starvation (1,2). Activation of PKR by dsRNA results in PKR dimerization and autophosphorylation of Thr446 and Thr451 in the activation loop. Substitution of threonine for alanine at position 451 completely inactivated PKR, while a mutant with a threonine to alanine substitution at position 446 was partially active (3). Research studies have implicated PKR activation in the pathologies of neurodegenerative diseases, including Alzheimer's disease (4,5).

Background References

1. Williams, B.R. (1999) *Oncogene* 18, 6112-6120.
2. Gil, J. and Esteban, M. (2000) *Apoptosis* 5, 107-114.
3. Romano, P. R. et al. (1998) *Mol. Cell. Biol.* 18, 2282-2297.
4. Peel, A.L. and Bredesen, D.E. (2003) *Neurobiol Dis* 14, 52-62.
5. Peel, A.L. (2004) *J Neuropathol Exp Neurol* 63, 97-105.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

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Limited Uses

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