

KD-Validated Anti-Phospho-PKR (T451) Rabbit Monoclonal Antibody
Rabbit monoclonal antibody
Catalog # AGI2357**Specification****KD-Validated Anti-Phospho-PKR (T451) Rabbit Monoclonal Antibody - Product Information**

Application	WB, ICC
Primary Accession	P19525
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Calculated MW	Predicted, 62 kDa ; Observed, 68 kDa
Gene Name	EIF2AK2
Aliases	eIF-2A protein kinase 2; Protein kinase RNA-activated; PKR; p68 kinase; P1/eIF-2A protein kinase
Immunogen	A synthesized peptide derived from human Phospho-PKR (T451)

KD-Validated Anti-Phospho-PKR (T451) Rabbit Monoclonal Antibody - Additional InformationGene ID **5610****Other Names**

Interferon-induced, double-stranded RNA-activated protein kinase, 2.7.11.1, Eukaryotic translation initiation factor 2-alpha kinase 2, eIF-2A protein kinase 2, Interferon-inducible RNA-dependent protein kinase, P1/eIF-2A protein kinase, Protein kinase RNA-activated, PKR, Protein kinase R, Tyrosine-protein kinase EIF2AK2, 2.7.10.2, p68 kinase, EIF2AK2, PKR, PRKR

KD-Validated Anti-Phospho-PKR (T451) Rabbit Monoclonal Antibody - Protein Information**Name** EIF2AK2**Synonyms** PKR, PRKR**Function**

IFN-induced dsRNA-dependent serine/threonine-protein kinase that phosphorylates the alpha subunit of eukaryotic translation initiation factor 2 (EIF2S1/eIF-2-alpha) and plays a key role in the innate immune response to viral infection (PubMed:18835251, PubMed:19189853, PubMed:19507191, PubMed:21072047, PubMed:21123651, PubMed:22381929, PubMed:22948139, PubMed:23229543). Inhibits viral replication via the integrated stress response (ISR): EIF2S1/eIF-2- alpha phosphorylation in response to viral infection converts EIF2S1/eIF-2-alpha in a global protein synthesis inhibitor, resulting to a shutdown of cellular and viral protein synthesis, while concomitantly initiating the preferential translation of ISR-specific mRNAs, such as the transcriptional activator ATF4 (PubMed:19189853, PubMed:21123651, PubMed:22948139, PubMed:23229543). Exerts its antiviral activity on a wide range of DNA and RNA viruses including hepatitis C virus (HCV), hepatitis B virus (HBV), measles virus (MV) and herpes simplex virus 1 (HHV-1) (PubMed:11836380, PubMed:19189853, PubMed:19840259, PubMed:20171114, PubMed:21710204, PubMed:23115276, PubMed:23399035). Also involved in the regulation of signal transduction, apoptosis, cell proliferation and differentiation: phosphorylates other substrates including p53/TP53, PPP2R5A, DHX9, ILF3, IRS1 and the HHV-1 viral protein US11 (PubMed:11836380, PubMed:19229320, PubMed:22214662). In addition to serine/threonine- protein kinase activity, also has tyrosine-protein kinase activity and phosphorylates CDK1 at 'Tyr-4' upon DNA damage, facilitating its ubiquitination and proteasomal degradation (PubMed:20395957). Either as an adapter protein and/or via its kinase activity, can regulate various signaling pathways (p38 MAP kinase, NF-kappa-B and insulin signaling pathways) and transcription factors (JUN, STAT1, STAT3, IRF1, ATF3) involved in the expression of genes encoding pro-inflammatory cytokines and IFNs (PubMed:22948139, PubMed:23084476, PubMed:23372823). Activates the NF-kappa-B pathway via interaction with IKBKB and TRAF family of proteins and activates the p38 MAP kinase pathway via interaction with MAP2K6 (PubMed:10848580, PubMed:15121867, PubMed:15229216). Can act as both a positive and negative regulator of the insulin signaling pathway (ISP) (PubMed:20685959). Negatively regulates ISP by inducing the inhibitory phosphorylation of insulin receptor substrate 1 (IRS1) at 'Ser-312' and positively regulates ISP via phosphorylation of PPP2R5A which activates FOXO1, which in turn up-regulates the expression of insulin receptor substrate 2 (IRS2) (PubMed:20685959). Can regulate NLRP3 inflammasome assembly and the activation of NLRP3, NLRP1, AIM2 and NLRC4 inflammasomes (PubMed:22801494). Plays a role in the regulation of the cytoskeleton by binding to gelsolin (GSN), sequestering the protein in an inactive conformation away from actin (By similarity).

Cellular Location

Cytoplasm. Nucleus. Cytoplasm, perinuclear region. Note=Nuclear localization is elevated in acute leukemia, myelodysplastic syndrome (MDS), melanoma, breast, colon, prostate and lung cancer patient samples or cell lines as well as neurocytes from advanced Creutzfeldt- Jakob disease patients.

Tissue Location

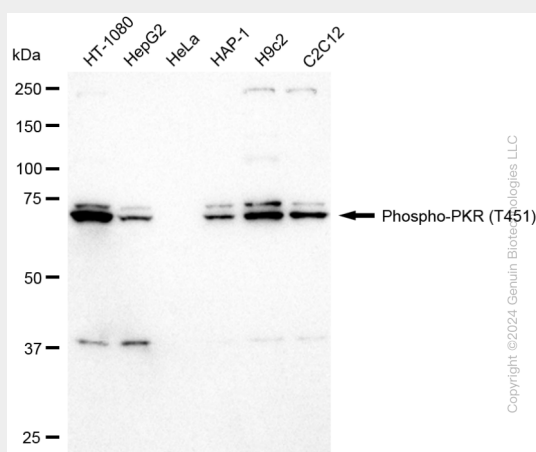
Highly expressed in thymus, spleen and bone marrow compared to non-hematopoietic tissues such as small intestine, liver, or kidney tissues. Colocalizes with GSK3B and TAU in the Alzheimer disease (AD) brain. Elevated levels seen in breast and colon carcinomas, and which correlates with tumor progression and invasiveness or risk of progression.

KD-Validated Anti-Phospho-PKR (T451) Rabbit Monoclonal Antibody - Protocols

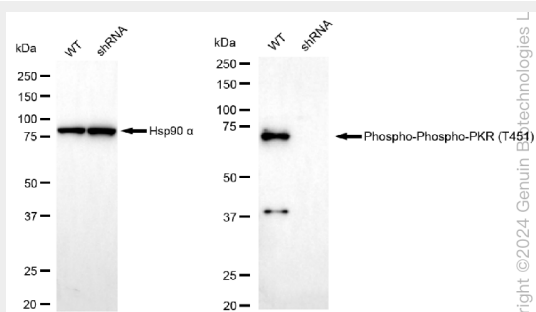
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

KD-Validated Anti-Phospho-PKR (T451) Rabbit Monoclonal Antibody - Images

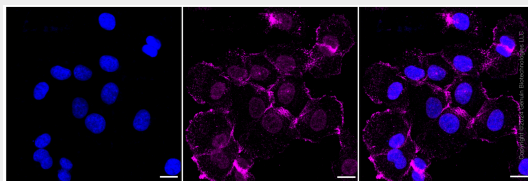


Western blotting analysis using anti-Phospho-PKR (T451) antibody (Cat#AGI2357). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Phospho-PKR (T451) antibody (Cat#AGI2357, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-Phospho-PKR (T451) antibody (Cat#AGI2357). Phospho-PKR (T451) expression in wild type (WT) and phospho-PKR (T451) shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-Phospho-PKR (T451) antibody (Cat#AGI2357, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

secondary antibody respectively.



Immunocytochemical staining of HT-1080 cells with Phospho-PKR (T451) antibody (Cat#AGI2357, 1:1,000). Nuclei were stained blue with DAPI; Phospho-PKR (T451) was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 μ m.