ARG41499
anti-PKR phospho (Thr446) antibody

Package: 100 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes PKR phospho (Thr446)
Tested Reactivity	Hu
Tested Application	FACS, ICC/IF, IHC-P, IP, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	PKR
Species	Human
Immunogen	Phosphospecific peptide around Thr446 of Human PKR.
Conjugation	Un-conjugated
Alternate Names	PKR; Interferon-inducible RNA-dependent protein kinase; Tyrosine-protein kinase EIF2AK2; p68 kinase; Eukaryotic translation initiation factor 2-alpha kinase 2; EIF2AK1; Protein kinase R; P1/eIF-2A protein kinase; PRKR; Protein kinase RNA-activated; PPP1R83; Interferon-induced, double-stranded RNA-activated protein kinase; EC 2.7.11.1; eIF-2A protein kinase 2; EC 2.7.10.2

Application Instructions

Application table

Application	Dilution
FACS	1:50
ICC/IF	1:50 - 1:200
IHC-P	1:50 - 1:200
IP	1:50
WB	1:500 - 1:2000

Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.
Positive Control	HeLa + Calyculin A + TNF alpha
Observed Size	~ 65 kDa

Properties

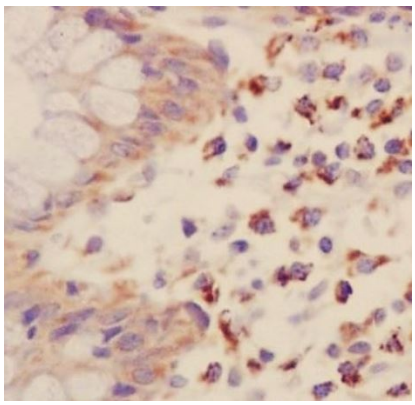
Form	Liquid
Purification	Affinity purified.
Buffer	PBS (pH 7.4), 150 mM NaCl, 0.02% Sodium azide and 50% Glycerol.
Preservative	0.02% Sodium azide

Stabilizer	50% Glycerol
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

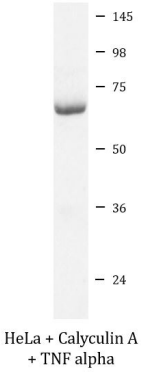
Gene Symbol	EIF2AK2
Gene Full Name	eukaryotic translation initiation factor 2-alpha kinase 2
Background	The protein encoded by this gene is a serine/threonine protein kinase that is activated by autophosphorylation after binding to dsRNA. The activated form of the encoded protein can phosphorylate translation initiation factor EIF2S1, which in turn inhibits protein synthesis. This protein is also activated by manganese ions and heparin. Three transcript variants encoding two different isoforms have been found for this gene. [provided by RefSeq, Oct 2011]
Function	IFN-induced dsRNA-dependent serine/threonine-protein kinase which plays a key role in the innate immune response to viral infection and is also involved in the regulation of signal transduction, apoptosis, cell proliferation and differentiation. 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). Inhibits viral replication via phosphorylation of the alpha subunit of eukaryotic initiation factor 2 (EIF2S1), this phosphorylation impairs the recycling of EIF2S1 between successive rounds of initiation leading to inhibition of translation which eventually results in shutdown of cellular and viral protein synthesis. Also phosphorylates other substrates including p53/TP53, PPP2R5A, DHX9, ILF3, IRS1 and the HHV-1 viral protein US11. 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 proteosomal degradation. 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 proinflammatory cytokines and IFNs. 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. Can act as both a positive and negative regulator of the insulin signaling pathway (ISP). 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). Can regulate NLRP3 inflammasome assembly and the activation of NLRP3, NLRP1, AIM2 and NLRC4 inflammasomes. Can trigger apoptosis via FADD-mediated activation of CASP8. Plays a role in the regulation of the cytoskeleton by binding to gelsolin (GSN), sequestering the protein in an inactive conformation away from actin. [UniProt]
Calculated Mw	62 kDa
PTM	Autophosphorylated on several Ser, Thr and Tyr residues. Autophosphorylation of Thr-451 is dependent on Thr-446 and is stimulated by dsRNA binding and dimerization. Autophosphorylation apparently leads to the activation of the kinase. Tyrosine autophosphorylation is essential for efficient dsRNA-binding, dimerization, and kinase activation. [UniProt]
Cellular Localization	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. [UniProt]

Images



ARG41499 anti-PKR phospho (Thr446) antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human colon tissue stained with ARG41499 anti-PKR phospho (Thr446) antibody.



HeLa + Calyculin A
+ TNF alpha

ARG41499 anti-PKR phospho (Thr446) antibody WB image

Western blot: HeLa cells treated with Calyculin A and TNF alpha. Cell lysates were stained with ARG41499 anti-PKR phospho (Thr446) antibody.