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RIP2 Rabbit pAb

Catalog # AP100221

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	O43353
Other Accession	O43353
Reactivity	Human, Mouse
Predicted	Rat, Pig, Rabbit, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	61195
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human RIP2
Epitope Specificity	401-540/540
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family.
SUBUNIT	Found in a signaling complex consisting of at least ARHGEF2, NOD2 and RIPK2. Interacts with ARHGEF2; the interaction mediates tyrosine phosphorylation of RIPK2 by Src kinase CSK. Binds to CFLAR/CLARP and CASP1 via their CARD domains. Binds to BIRC3/c-IAP1 and BIRC2/c-IAP2, TRAF1, TRAF2, TRAF5 and TRAF6. May be a component of both the TNFRSF1A and TNRFSF5/CD40 receptor complex. Interacts with NOD1. Interacts (via CARD domain) with NOD2 (via CARD domain). Interacts with MAP3K4; this interaction sequesters RIPK2 from the NOD2 signaling pathway. Interacts with IKBKG/NEMO. The polyubiquitinated protein interacts with MAP3K7/TAK1. Interacts with XIAP/BIRC4. Interacts with NLRP10. Interacts with CARD9. Interacts with INAVA; the interaction takes place upon PRR stimulation (PubMed:28436939).
Post-translational modifications	Ubiquitinated on Lys-209; undergoes 'Lys-63'-linked polyubiquitination catalyzed by ITCH. Polyubiquitinated with 'Lys-48' and 'Lys-63'-linked chains by BIRC2/c-IAP1 and BIRC3/c-IAP2, leading to activation of NF-kappa-B. Also undergoes 'Met-1'-linked polyubiquitination; the head-to-tail linear polyubiquitination is mediated by the LUBAC complex in response to NOD2 stimulation. Linear polyubiquitination is restricted by FAM105B/otulin, probably to limit NOD2-dependent proinflammatory signaling activation of NF-kappa-B. Autophosphorylated. Autophosphorylation at Tyr-474 is necessary for effective NOD2 signaling. Phosphorylated. Phosphorylation at Tyr-381 by Src kinase CSK occurs in a ARHGEF2-dependent manner and is required for NOD2-dependent innate immune activation.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a member of the receptor-interacting protein (RIP) family of serine/threonine protein kinases. The encoded protein contains a C-terminal caspase activation and recruitment domain (CARD), and is a component of signaling complexes in both the innate and adaptive immune pathways. It is a potent activator of NF-kappaB and inducer of apoptosis in

response to various stimuli. [provided by RefSeq, Jul 2008].

Additional Information

Gene ID	8767
Other Names	CARD3; CARDIAK; CCK; GIG30; RICK; RIP2; 2210420D18Rik; D4Bwg0615e; RIPK2_HUMAN; RIPK2; CARD-containing interleukin-1 beta-converting enzyme-associated kinase (CARD-containing IL-1 beta ICE-kinase); RIP-like-interacting CLARP kinase; Receptor-interacting protein 2 (RIP-2); Tyrosine-protein kinase RIPK2; 2.7.11.1; RIPK2_MOUSE; Receptor-interacting protein 2; receptor interacting serine/threonine kinase 2; receptor-interacting serine-threonine kinase 2
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=2ug /Test
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	RIPK2 {ECO:0000303|PubMed:30026309, ECO:0000312|HGNC:HGNC:10020}
Function	Serine/threonine/tyrosine-protein kinase that plays an essential role in modulation of innate and adaptive immune responses (PubMed:14638696, PubMed:17054981, PubMed:21123652, PubMed:28656966, PubMed:9575181, PubMed:9642260). Acts as a key effector of NOD1 and NOD2 signaling pathways: upon activation by bacterial peptidoglycans, NOD1 and NOD2 oligomerize and recruit RIPK2 via CARD-CARD domains, leading to the formation of RIPK2 filaments (PubMed:17054981, PubMed:17562858, PubMed:21123652, PubMed:22607974, PubMed:28656966, PubMed:29452636, PubMed:30026309). Once recruited, RIPK2 autophosphorylates and undergoes 'Lys-63'-linked polyubiquitination by E3 ubiquitin ligases XIAP, BIRC2 and BIRC3, as well as 'Met-1'-linked (linear) polyubiquitination by the LUBAC complex, becoming a scaffolding protein for downstream effectors (PubMed:22607974, PubMed:28545134, PubMed:29452636, PubMed:30026309, PubMed:30279485, PubMed:30478312). 'Met-1'-linked polyubiquitin chains attached to RIPK2 recruit IKBKG/NEMO, which undergoes 'Lys-63'-linked polyubiquitination in a RIPK2-dependent process (PubMed:17562858, PubMed:22607974, PubMed:29452636, PubMed:30026309). 'Lys-63'-linked polyubiquitin chains attached to RIPK2 serve as docking sites for TAB2 and TAB3 and mediate the recruitment of MAP3K7/TAK1 to IKBKG/NEMO, inducing subsequent activation of IKBKB/IKKB (PubMed:18079694). In turn, NF-kappa-B is released from NF-kappa-B inhibitors and translocates into the nucleus where it activates the transcription of hundreds of genes involved in immune response, growth control, or protection against apoptosis (PubMed:18079694). The protein kinase activity is dispensable for the NOD1 and NOD2 signaling pathways (PubMed:29452636, PubMed:30026309). Contributes to the tyrosine phosphorylation of the guanine exchange factor ARHGEF2 through Src tyrosine kinase leading to NF-kappa-B activation by NOD2 (PubMed:21887730). Also involved in adaptive immunity: plays a role during engagement of the T-cell receptor (TCR) in promoting BCL10 phosphorylation and subsequent NF-kappa-B activation (PubMed:14638696).

	Plays a role in the inactivation of RHOA in response to NGFR signaling (PubMed:26646181).
Cellular Location	Cytoplasm. Cell membrane; Peripheral membrane protein. Endoplasmic reticulum. Note=Recruited to the cell membrane by NOD2 following stimulation by bacterial peptidoglycans
Tissue Location	Detected in heart, brain, placenta, lung, peripheral blood leukocytes, spleen, kidney, testis, prostate, pancreas and lymph node.

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