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Datasheet for 600-401-996

CDK9 phospho T29 Antibody

Overview

Description:	Anti-Cyclin-Dependent Kinase 9 (CDK9) pT29 (RABBIT) Antibody - 600-401-996
Item No.:	600-401-996
Size:	100 µg
Applications:	ELISA, WB
Reactivity:	Human, Mouse, Rat
Host Species:	Rabbit

Product Details

Background:

This antibody is designed, produced, and validated as part of a collaboration between Rockland and the National Cancer Institute (NCI). CDK9 (PITALRE) is a member of the cyclin-dependent protein kinase (CDK) family. CDK family members are highly similar to the gene products of S. cerevisiae cdc28 and S. pombe cdc2 and are known as important cell cycle regulators. CDKs are heteromeric serine/threonine kinases that control progression through the cell cycle in concert with their regulatory subunits, the cyclins. Although there are 12 different cdk genes, only 5 have been shown to directly drive the cell cycle. CDK9 (PITALRE) interacts with a conserved domain in the TRAF-C region of the tumor necrosis factor signal transducer TRAF2. This kinase was also found to be a component of the multiprotein complex TAK/P-TEFb, which is an elongation factor for RNA polymerase II-directed transcription and functions by phosphorylating the C-terminal domain of the largest subunit of RNA polymerase II. It promotes RNA synthesis in genetic programs for cell growth, differentiation and viral pathogenesis. P-TEFb is also involved in co-transcriptional histone modification, mRNA processing, and mRNA export. It modulates a complex network of chromatin modifications including histone H2B mono-ubiquitination (H2Bub1), H3 lysine 4 trimethylation (H3K4me3) and H3K36me3. It integrates phosphorylation during transcription with chromatin modifications to control co-transcriptional histone mRNA processing. CDK9 forms a complex with, and is regulated by, its regulatory subunit, cyclin T or cyclin K. The CDK9/cyclin-K complex has also a kinase activity towards CTD of RNAP II and can substitute for CDK9/cyclin-T P-TEFb in vitro. The CDK9/cyclin-K complex is required for genome integrity maintenance, by promoting cell cycle recovery from replication arrest and limiting single-stranded DNA amount in response to replication stress, thus reducing the breakdown of stalled replication forks and avoiding DNA damage. In addition, probable function in DNA repair of isoform 2 via interaction with KU70/XRCC6. CDK9 promotes cardiac myocyte enlargement. The phosphorylation of MYOD1 enhances its transcriptional activity and thus promotes muscle differentiation. HIV-1 Tat protein has been found to interact with this protein and cyclin T, which suggested a possible involvement of this protein in AIDS.

Synonyms:	rabbit anti-CDK9 pT29 antibody, Cell division protein kinase 9, Cyclin-dependent kinase 9, Serine/threonine-protein kinase PITALRE, Cell division cycle 2-like protein kinase 4, C-2K, Tat-associated kinase complex catalytic subunit, CDC2L4, TAK
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	CDK9
Reactivity:	Human, Mouse, Rat
PTM Specificity:	Phosphorylation
Immunogen Type:	Conjugated Peptide
Immunogen:	This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to residues surrounding T29 in the human CDK9 protein.
Purity/Specificity:	This product was affinity purified from monospecific antiserum by immunoaffinity chromatography using phospho-peptide coupled to agarose beads followed by solid phase adsorption against nonphospho-peptide. This antibody is specific for human CDK9 protein phosphorylated at T29. A BLAST analysis was used to suggest cross-reactivity with CDK9 from human, mouse and rat based on 100% homology with the immunizing sequence. Cross-reactivity with CDK9 from other sources has not been determined.
Relevant Links:	• NCBI - 4502747 • UniProtKB - P50750 • GeneID - 1025

Application Details

Tested Applications:	ELISA, WB
Application Note:	This affinity purified antibody has been tested for use in ELISA and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 42 kDa in size corresponding to phosphorylated CDK9 protein by western blotting in the appropriate cell lysate or extract. This phospho-specific polyclonal antibody reacts with human CDK9 pT29 and shows minimal reactivity by ELISA against the non-phosphorylated form of the immunizing peptide.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.

ELISA:	1:5,000 - 1:24,000
IP:	1:100
WB:	1:200 - 1:2,000

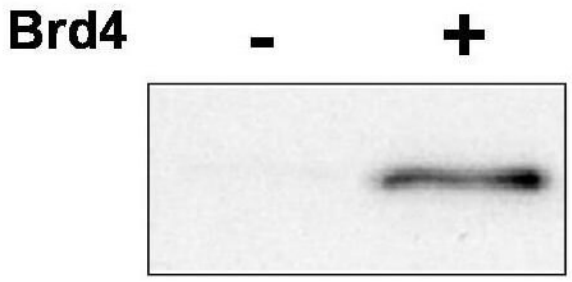
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.3 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images



Western Blot
Western blot using Rockland's affinity purified anti-CDK9 pT29 antibody shows detection of phosphorylated CDK9. 100 ng of purified P-TEFb, which contains CDK9 and its regulatory cyclin T1 subunit, was incubated with ATP in the presence or absence of Brd4, a protein known to induce CDK9 phosphorylation at T29. The primary antibody was used at a 1:1000 dilution. Personal Communication, J. Brady, NCI, Bethesda, MD.

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