Active Recombinant Human PRKAR1A Protein

Cat. No. PRKAR1A-29471TH **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human cAMP-dependent protein kinase regulatory subunit RI alpha was expressed in E. coli.
Species	Human
Source	E.coli
Description	cAMP is a signaling molecule important for a variety of cellular functions. cAMP exerts its effects by activating the cAMP-dependent protein kinase, which transduces the signal through phosphorylation of different target proteins. The inactive kinase holoenzyme is a tetramer composed of two regulatory and two catalytic subunits. cAMP causes the dissociation of the inactive holoenzyme into a dimer of regulatory subunits bound to four cAMP and two free monomeric catalytic subunits. Four different regulatory subunits and three catalytic subunits have been identified in humans. This gene encodes one of the regulatory subunits. This protein was found to be a tissue-specific extinguisher that down-regulates the expression of seven liver genes in hepatoma x fibroblast hybrids. Mutations in this gene cause Carney complex (CNC). This gene can fuse to the RET protooncogene by gene rearrangement and form the thyroid tumor-specific chimeric oncogene known as PTC2. A nonconventional nuclear localization sequence (NLS) has been found for this protein which suggests a role in DNA replication via the protein serving as a nuclear transport protein for the second subunit of the Replication Factor C (RFC40). Several alternatively spliced transcript variants encoding two different isoforms have been observed.

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Bio-activity	Inhibitory Activity: The cAMP-dependent protein kinase, regulatory subunit RIα reversibly inhibits the catalytic subunit Cα of the cAMP-dependent protein kinase PKA. The inhibition of the catalytic subunit can be reversed by the addition of the second messenger cAMP (> 1μM).
Molecular Mass	86 kDa
AASequence	MESGSTAASEEARSLRECELYVQKHNIQALLKDSIVQLCTARPERPMAFLREYFERL EKEEAKQIQNLQKAGTRTDSREDEISPPPPNPVVKGRRRRGAISAEVYTEEDAASYV RKVIPKDYKTMAALAKAIEKNVLFSHLDDNERSDIFDAMFSVSFIAGETVIQQGDEGD NFYVIDQGETDVYVNNEWATSVGEGGSFGELALIYGTPRAATVKAKTNVKLWGIDR DSYRRILMGSTLRKRKMYEEFLSKVSILESLDKWERLTVADALEPVQFEDGQKIVVQ GEPGDEFFIILEGSAAVLQRRSENEEFVEVGRLGPSDYFGEIALLMNRPRAATVVAR GPLKCVKLDRPRFERVLGPCSDILKRNIQQYNSFVSLSV
Purity	> 95% by SDS-PAGE
Concentration	0.38 mg/mL (Bradford method using BSA as standard protein)
Shipping	Dry Ice
Reference	1. Tortora G, Yokozaki H, Pepe S, Clair T, Cho-Chung YS (1991) "Differentiation of HL-60 leukemia by type I regulatory subunit antisense oligodeoxynucleotide of cAMP-dependent protein kinase" Proc. Natl. Acad. Sci. U S A 88(5):2011-5 2. Tasken K, Skalhegg BS, Hansson V et al. (1993) "Novel isozymes of cAMP-dependent protein kinase exist in human cells due to formation of RI alpha-RI beta heterodimeric complexes" J. Biol. Chem. 268 (28): 21276-83 3. Cho-Chung YS, Clair T (1993) "The regulatory subunit of cAMP-dependent protein kinase as a target for chemotherapy of cancer and other cellular dysfunctional-related diseases" Pharmacol. Ther. 60(2):265-88

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Storage Buffer	20 mM Mops (pH 7.0), 150 mM NaCl, 20% glycerol

GENE INFORMATION

Gene Name	PRKAR1A protein kinase cAMP-dependent type I regulatory subunit alpha [Homo sapiens (human)]
Official Symbol	PRKAR1A
Synonyms	PRKAR1A; protein kinase cAMP-dependent type I regulatory subunit alpha; CAR; CNC; CNC1; PKR1; TSE1; ADOHR; PPNAD1; PRKAR1; ACRDYS1; Prkar1alpha; cAMP-dependent protein kinase type I-alpha regulatory subunit; Carney complex type 1; cAMP-dependent protein kinase regulatory subunit RIalpha; cAMP-dependent protein kinase type I-alpha regulatory chain; epididymis secretory sperm binding protein; protein kinase A type 1a regulatory subunit; protein kinase, cAMP-dependent, regulatory subunit type I alpha; protein kinase, cAMP-dependent, regulatory, type I, alpha; tissue-specific extinguisher 1; EC 2.7.11.1
Gene ID	5573
mRNA Refseq	NM_212472
Protein Refseq	NP_997637
MIM	188830
UniProt ID	P10644

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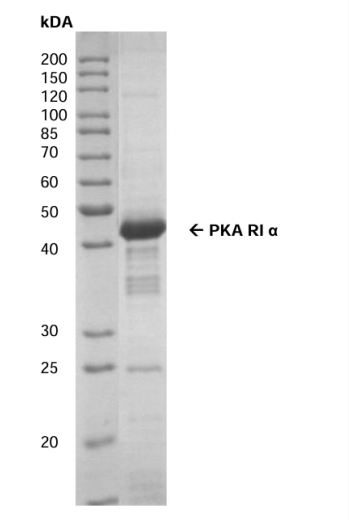
SDS-PAGE	

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