

## Product datasheet for **TA324281**

### Protein Kinase A regulatory subunit I alpha (PRKAR1A) Rabbit Polyclonal Antibody

#### Product data:

Product Type:	Primary Antibodies
Applications:	WB
Recommended Dilution:	WB: 1:500-2000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Immunogen:	Fusion protein corresponding to N terminal 250 amino acids of human protein kinase, cAMP-dependent, regulatory, type I, alpha
Formulation:	PBS pH7.3, 0.05% NaN <sub>3</sub> , 50% glycerol
Concentration:	lot specific
Purification:	Antigen affinity purification
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Predicted Protein Size:	43 kDa
Gene Name:	protein kinase cAMP-dependent type I regulatory subunit alpha
Database Link:	<a href="#">NP_001263218</a> <a href="#">Entrez Gene 19084 MouseEntrez Gene 25725 RatEntrez Gene 5573 Human P10644</a>



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**Background:**

The second messenger cyclic AMP (cAMP) activates cAMP-dependent protein kinase (PKA or cAPK) in mammalian cells and controls many cellular mechanisms such as gene transcription, ion transport, and protein phosphorylation. Inactive PKA is a heterotetramer composed of a regulatory subunit (R) dimer and a catalytic subunit (C) dimer. In this inactive state, the pseudosubstrate sequences on the R subunits block the active sites on the C subunits. Three C subunit isoforms (C- $\alpha$ , C- $\beta$ , and C- $\gamma$ ) and two families of regulatory subunits (RI and RII) with distinct cAMP binding properties have been identified. The two R families exist in two isoforms,  $\alpha$  and  $\beta$  (RI- $\alpha$ , RI- $\beta$ , RII- $\alpha$ , and RII- $\beta$ ). Upon binding of cAMP to the R subunits, the autoinhibitory contact is eased and active monomeric C subunits are released. PKA shares substrate specificity with Akt (PKB) and PKC, which are characterized by an arginine at position -3 relative to the phosphorylated serine or threonine residue. Substrates that present this consensus sequence and have been shown to be phosphorylated by PKA are Bad (Ser155), CREB (Ser133), and GSK-3 (GSK-3 $\alpha$  Ser21 and GSK-3 $\beta$  Ser9). In addition, combined knock-down of PKA C- $\alpha$  and - $\beta$  blocks cAMP-mediated phosphorylation of Raf (Ser43 and Ser259). Autophosphorylation and phosphorylation by PDK-1 are two known mechanisms responsible for phosphorylation of the C subunit at Thr197.

**Synonyms:**

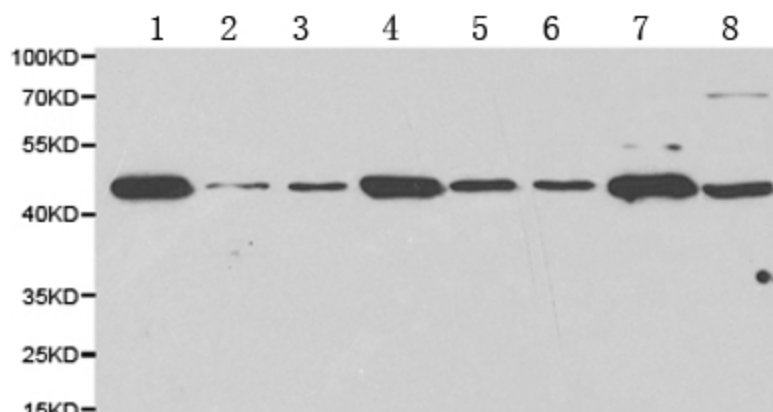
ACRDYS1; ADOHR; CAR; CNC; CNC1; PKR1; PPNAD1; PRKAR1; TSE1

**Protein Families:**

Druggable Genome, Transcription Factors

**Protein Pathways:**

Apoptosis, Insulin signaling pathway

**Product images:**

Predicted band size: 43 kDa. Positive control: HeLa, CEM, A549, SW480, PC3, V251, HCTnb and heart tissue lysate. Recommended dilution: 1/500-2000. (Gel: 10%SDS-PAGE Lane 1: HeLa cell lysate Lane 2:CEM cell lysate Lane 3: A549 cell lysate Lane 4: SW480 cell lysate Lane 5: PC3 cell lysate Lane 6: V251 cell lysate Lane 7: HCTnb cell lysate Lane 8: Heart tissue lysate Lysates: 40 ug per lane Primary antibody: 1/500 dilution Secondary antibody: Goat anti Rabbit IgG - H&L (HRP) at 1/10000 dilution)