

Recombinant (cAMP free) Protein Kinase A regulatory subunit-I A

Cat. No. rcfPKArla-09 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	PKA regulatory subunit I a Recombinant is a dimeric 90 kDa protein. PKAR-I alpha is purified by proprietary chromatographic techniques.
Source	E.coli
Description	The Regulatory (R) subunit of Protein Kinase A (PKA) inhibits its kinase activity by shielding the Catalytic (C) subunit from physiological substrates. This inhibition is reversed in response to extra-cellular signals that increase cAMP levels in the cytoplasm. Upon cAMP binding to R, C is allosterically released from R, activating a spectrum of downstream signaling cascades. Crystallographic data indicated that a series of distinct conformational changes within CBD-A must occur to relay the cAMP signal from the cAMP binding site to the R:C interaction interface. One critical cAMP relay site within the CBD-A of R has been identified as Asp170 because the D170A mutation selectively reduces the negative cooperativity between the cAMP- and C-recognition sites (i.e. the KD for the R:C complex in the presence of cAMP is reduced by more than 12-fold), without significantly compromising the high affinity of R for both binding partners.
Physical Appearance	Sterile Filtered clear solution (0.185mg/ml).
Purity	Greater than 95% as determined by SDS-PAGE.
Formulation	PKA regulatory subunit-I alpha is supplied in 50% glycerol.

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Unit Definition	One unit is defined as the amount of recombinant PKA catalytic subunit alpha, required to incorporate 1nmol of phosphate into the specific substrate peptide kemptide (LRRASIG) in one minute at 30°C.
Biological Activity	PKA regulatory subunit alpha specifically inhibits PKA catalytic subunit (Ki about 0.1nM). Activity can be restored by adding cAMP (Kact about 100nM). The binding of the catalytic subunit is dependent on the presence of ATP and Mg.
Storage	PKAR-Ia should be stored at 4°C if entire vial will be used within 2-4 weeks. For long term storage it is recommended to store at -20°C. Avoid multiple freeze-thaw cycles.

GENE INFORMATION

Synonyms	Protein Kinase A regulatory subunit-I A; cAMP free Protein Kinase A regulatory subunit-I A; PKAR-I alpha; Regulatory (R) subunit of Protein Kinase A (PKA); PRKAR1A; CAR; CNC; CNC1; DKFZp779L0468; MGC17251; PKR1; PRKAR1; TSE1; PPNAD1; Tissue-specific extinguisher 1; cAMP-dependent protein kinase regulatory subunit RIalpha; cAMP-dependent protein kinase type I-alpha regulatory chain; cAMP-dependent protein kinase, regulatory subunit alpha 1; protein kinase A type 1a regulatory subunit; protein kinase, cAMP-dependent, regulatory, type I, alpha (tissue specific extinguisher 1); tissue-specific extinguisher 1.
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