



## Product Datasheet

<b>Product Name</b>	(cAMP free) Protein Kinase A regulatory subunit-I A Recombinant
<b>Cata No</b>	CB500809
<b>Source</b>	<i>Escherichia Coli</i>
<b>Synonyms</b>	cAMP free protein kinase type I-alpha regulatory subunit, Tissue-specific extinguisher 1, TSE1, CAR, CNC, CNC1, PKR1, PPNAD1, PRKAR1, PRKAR1A, MGC17251, DKFZp779L0468, 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).

### 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.

PKA regulatory subunit I a Recombinant is a dimeric 90 kDa protein.

PKAR-I alpha is purified by proprietary chromatographic techniques.

### Physical Appearance

Sterile Filtered clear solution.

### 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.

### Purity

Greater than 95% as determined by SDS-PAGE.

### Formulation

PKA regulatory subunit-I alpha is supplied in 50% glycerol.

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