

Recombinant cAMP-Dependent Protein Kinase A regulatory subunit-II A

Cat. No. PKAR-IIa-94 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	The recombinant PKA regulatory subunit II-a is a dimeric 90 kDa protein. Protein Kinase A is purified by proprietary chromatographic techniques.
Source	E.coli
Description	cAMP-dependent PKA is a ubiquitous serine/threonine protein kinase present in a variety of tissues (e.g. brain, skeletal muscle, heart). The intracellular cAMP level regulates cellular responses by altering the interaction between the catalytic C and regulatory R subunits of PKA. The inactive tetrameric PKA holoenzyme R2C2 is activated when cAMP binds to R2, which dissociates the tetramer to R2 cAMP 4 and two active catalytic subunits. Free Catalytic subunits of PKA can phosphorylate a wide variety of intracellular target proteins. In response to hormone- induced high cAMP levels, PKA phosphorylates glycogen synthetase (inhibition of the enzyme activity) and phosphorylase kinase to block glycogen synthesis. Different isoforms of catalytic and regulatory subunits suggest specific functions.
Physical Appearance	Sterile Filtered clear solution.
Purity	Greater than 95% as determined by SDS-PAGE.
Formulation	PKA regulatory subunit-II alpha is supplied in 50% glycerol.
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

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kemptide (LRRASIG) in one minute at 30°C.

Biological Activity

PKA regulatory subunit alpha specifically inhibits PKA catalytic subunit (K_i about 0.7nM). The binding is not dependent on the presence of ATPMg, however, the regulatory subunit will be phosphorylated at the binding site by PKA C alpha upon binding. Activity can be restored by adding the second messenger cAMP (K_{act} about 100nM). Subcellular localisation is regulated via interaction of PKA RII with so-called A-kinase anchoring proteins (AKAPs).

Storage

PKA 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

cAMP-Dependent Protein Kinase A regulatory subunit-II A; PKA-RII alpha; MGC3606; PKR2; PRKAR2; cAMP-dependent protein kinase regulatory subunit RII alpha; cAMP-dependent protein kinase, regulatory subunit alpha 2; protein kinase A, RII-alpha subunit; protein kinase, cAMP-dependent, regulatory, type II, alpha.

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