

## Certificate of Analysis

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**Product Name:** cGMP Dependent Kinase Inhibitor Peptide

**Catalog No.:** 1883

**Batch No.:** 1

CAS Number: 82801-73-8

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>38</sub>H<sub>74</sub>N<sub>18</sub>O<sub>10</sub>  
**Batch Molecular Weight:** 943.12  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 62%  
**Storage:** Desiccate at -20°C  
**Peptide Sequence:** Arg-Lys-Arg-Ala-Arg-Lys-Glu

### 2. ANALYTICAL DATA

**HPLC:** Shows >95% purity

### 3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical		Actual	Amino Acid Theoretical		Actual
Ala	1.00	1.00	Lys	2.00	1.92
Arg	3.00	2.85	Met		
Asx			Phe		
Cys			Pro		
Glx	1.00	1.13	Ser		
Gly			Thr		
His			Trp		
Ile			Tyr		
Leu			Val		

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CAS Number: 82801-73-8

**Description:**

Competitive inhibitor of cGMP-dependent protein kinase (PKG); analog of a substrate peptide corresponding to a phosphorylation site of histone H2B. Competes with synthetic substrates ( $K_i = 86$  mM) but does not inhibit phosphorylation of intact histones by PKG. Inhibits phosphorylation of intact histones by PKA.

**Physical and Chemical Properties:**Batch Molecular Formula:  $C_{38}H_{74}N_{18}O_{10}$ 

Batch Molecular Weight: 943.12

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Arg-Lys-Arg-Ala-Arg-Lys-Glu

**Storage:** Desiccate at  $-20^{\circ}\text{C}$ **Solubility & Usage Info:**

Most peptides are soluble in distilled water. If the peptide does not completely dissolve addition of 0.1M acetic acid (those containing Arg, Lys, His) or 0.1M ammonia (those containing Asp, Glu) may help. Occasionally 10% DMSO or DMF may be required for extremely insoluble peptides. In addition to these measures sonication may also be helpful.

**Net Peptide Content:** 62% (Remaining weight made up of counterions and residual water).**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a  $45-60^{\circ}\text{C}$  water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at  $-20^{\circ}\text{C}$ . Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a  $0.2\ \mu\text{m}$  filter to remove potential bacterial contamination whenever possible.

**References:**

**Bhatnagar et al** (1988) Synthetic peptide analogues differentially alter the binding affinities of cyclic nucleotide dependent protein kinases for nucleotide substrates. *Biochemistry* **27** 1988. PMID: 2837278.

**Glass et al** (1986) Differential and common recognition of the catalytic sites of the cGMP-dependent and cAMP-dependent protein kinases by inhibitory peptides derived from the heat-stable inhibitor protein. *J. Biol. Chem.* **261** 12166. PMID: 3017964.

**Glass** (1983) Differential responses of cyclic GMP-dependent and cyclic AMP-dependent protein kinases to synthetic peptide inhibitors. *Biochem. J.* **213** 159. PMID: 6615418.

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