

Certificate of Analysis

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Product Name: Dibutyryl-cAMP, sodium salt

Catalog No.: 1141

Batch No.: 32

CAS Number: 16980-89-5

EC Number: 241-059-4

IUPAC Name: *N*⁶,*O*²-Dibutyryl adenosine 3',5'-cyclic monophosphate sodium salt

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₈H₂₃N₅NaO₈P.1½H₂O

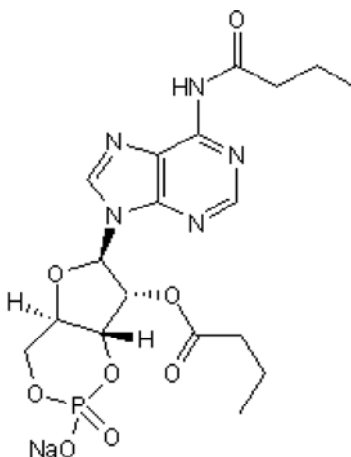
Batch Molecular Weight: 518.39

Physical Appearance: White solid

Solubility: water to 100 mM
DMSO to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.4% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:	Carbon Hydrogen Nitrogen		
	Theoretical	Found	
	41.71	41.3	5.06
		4.68	13.51
			13.29

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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IUPAC Name: N^6, O^2 -Dibutyryl adenosine 3',5'-cyclic monophosphate sodium salt

Description:

Dibutyryl-cAMP sodium salt is a cell-permeable analog of cAMP that activates cAMP-dependent protein kinases and is a phosphodiesterase inhibitor. Combined with other reagents, dibutyryl-cAMP promotes differentiation of neural stem/progenitor cells (NSPCs) and other cell lines and increases survival rates of NSPCs and differentiation into neurons in vivo. Promotes neurite outgrowth in cell cultures. Dibutyryl-cAMP has anti-inflammatory activity and is used to promote wound healing. Choline acetyltransferase and vesicular acetylcholine transporter mRNA are increased in cells treated with dibutyryl-cAMP.

Physical and Chemical Properties:

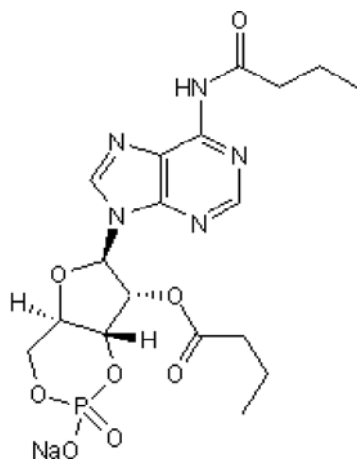
Batch Molecular Formula: $C_{18}H_{23}N_5NaO_8P \cdot 1\frac{1}{2}H_2O$

Batch Molecular Weight: 518.39

Physical Appearance: White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

water to 100 mM

DMSO to 100 mM

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°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Xia et al (2016) Transcriptional comparison of human induced and primary midbrain DAergic neurons. *Sci.Rep.* **6** 20270. PMID: 26842779.

Kim et al (2011) Effects of dibutyryl cyclic-AMP on survival and neuronal differentiation of neural stem/progenitor cells transplanted into spinal cord injured rats. *PLoS One* **6**. PMID: 21738784.

Carranza et al (1998) Protein kinase A induces recruitment of active Na^+, K^+ -ATPase units to the plasma membrane of rat proximal convoluted tubule cells. *J.Physiol.* **511** 235. PMID: 9679177.

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