

Store at  
-20°C  
  
#35857

# Dibutyryl-cAMP (sodium salt)

25 mg



**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**For Research Use Only. Not for Use in Diagnostic Procedures.**

## Background

Dibutyryl-cAMP (sodium salt), also known as bucladesine, is an analog of the second messenger cyclic adenosine 3'5'-monophosphate (cAMP). Dibutyryl-cAMP is a phosphodiesterase (PDE) inhibitor and a cAMP-dependent protein kinase (PKA) activator that mimics the action of cAMP in cells (1). The anti-inflammatory activity of Dibutyryl-cAMP makes it an option for the treatment of skin inflammation (2). Exposure of rat glial cells to Dibutyryl-cAMP inhibited cell growth and increased glial fibrillary acidic protein levels, resulting in a change toward an astrocytic phenotype (3). Treatment of rat hepatocytes with Dibutyryl-cAMP suppressed both iNOS mRNA and protein expression, decreased iNOS promoter activity, and reduced DNA binding of the transcription factor NF-κB (4). Dibutyryl-cAMP treatment increased phosphorylated cAMP-response element-binding protein (p-CREB) via protein kinase A (PKA) signaling in rat pulmonary fibroblasts. Cells treated with Dibutyryl-cAMP exhibited a reduced number and size of silicosis nodules, and inhibited myofibroblast differentiation and extracellular matrix deposition (5).

## Molecular Formula

$C_{18}H_{23}N_5O_8P \cdot Na$

## Molecular Weight

491.4 g/mol

## Purity

>97%

## CAS

16980-89-5

## Solubility

Soluble in DMSO at 50 mg/mL or water at 50 mg/mL.

## Storage

Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 1 month to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

## Directions for Use

Dibutyryl-cAMP (sodium salt) is supplied as a lyophilized powder. For a 10 mM stock, reconstitute 5 mg of powder in 1.02 mL of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

## Background References

1. Bartsch, M. et al. (2003) *Biol Chem* 384, 1321-6.
2. Rundfeldt, C. et al. (2012) *Arch Dermatol Res* 304, 313-7.
3. Adornetto, A. et al. (2013) *FEBS Open Bio* 3, 459-66.
4. Harbrecht, B.G. et al. (2001) *J Surg Res* 99, 258-64.
5. Liu, Y. et al. (2017) *Respir Res* 18, 38.

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