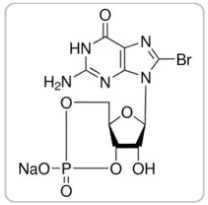

All Photos (3)

Documents

SDS

COO/COA

Specification Sheet

More Documents

B1381 Sigma-Aldrich

8-Bromoguanosine 3′,5′-cyclic monophosphate sodium salt

≥98% (HPLC), powder

Synonym(s):
8-Br-cGMP, 8-Bromo-cyclic GMP

Empirical Formula (Hill Notation):
$C_{10}H_{10}BrN_5NaO_7P$

CAS Number:	51116-01-9	**Molecular Weight:**	446.08
EC Number:	256-993-8	**MDL number:**	MFCD00070128
PubChem Substance ID:	24278021	**NACRES:**	NA.77

SKU	Pack Size	Availability	Price	Quantity
B1381-10MG	10 MG	Only 6 left in stock (more on the way) Details...	€93.80	− +
B1381-25MG	25 MG	Estimated to ship on November 03, 2022	€206.00	− +
B1381-100MG	100 MG	Only 3 left in stock (more on the way) Details...	€705.00	− +

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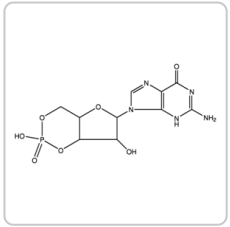
RECOMMENDED PRODUCTS



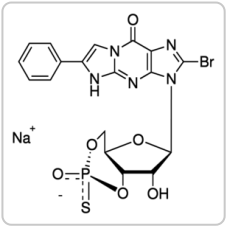
Sigma-Aldrich

G7504

Guanosine 3′,5′-cyclic monophosphate

≥98% (HPLC), powder

View Price and Availability



Sigma-Aldrich

B6684

Rp-8-Bromo-β-phenyl-1,N^2-ethenoguanosine 3′,5′-cyclic monophosphorothioate sodium salt

≥98% (HPLC), powder

View Price and Availability

PROPERTIES

Quality Level	**200**
assay	≥98% (HPLC)
form	powder
solubility	H_2O: 50 mg/mL
storage temp.	−20°C
SMILES string	[Na+].NC1=Nc2c(nc(Br)n2[C@@H]3O[C@@H]4COP([O-])(=O)O[C@H]4[C@H]3O)C(=O)N1
InChI	1S/C10H11BrN5O7P.Na/c11-9-13-3-6(14-10(12)15-7(3)18)16(9)8-4(17)5-2(22-8)1-21-24(19,20)23-5;/h2,4-5,8,17H,1H2,(H,19,20)(H3,12,14,15,18);/q;+1/p-1/t2-,4-,5-,8-;/m1./s1

InChI key	ZJRFCXHKYQVNFK-YEOHUATISA-M

DESCRIPTION

General description

8-Bromoguanosine 3′,5′-cyclic monophosphate is a cell-permeable cGMP analog of cyclic guanosine 3′:5′-monophosphate (cGMP). It is a lipid-soluble analog used in cGMP based contraction studies in cardiomyocytes.

Application

8-Bromoguanosine 3′,5′-cyclic monophosphate sodium salt has been used:

- as a cyclic guanosine 3′:5′-monophosphate (cGMP) agonist in the collapse assay in retinal ganglion axons(10)
- as a component of reaction buffer in in vitro kinase activity assay of recombinant protein kinase (PKG)(11)
- as a cyclic nucleotide analog for the induction of cyclic nucleotide-gated channel (CNGA and CNGC) expression in human embryonic kidney cells(12)

Packaging

10 mg in glass bottle

25, 100 mg in poly bottle

Biochem/physiol Actions

8-Bromoguanosine 3′,5′-cyclic monophosphate has greater resistance to hydrolysis by phosphodiesterases than cGMP. Activates cGMP-dependent protein kinase. It slows or inhibits the intracellular calcium oscillations of tracheal smooth muscle cells in response to acetylcholine. 8-Bromoguanosine 3′,5′-cyclic monophosphate sodium salt mimics the effect of nitric oxide generating drugs. It modulates circadian rhythms and increases optic nerve impulses. In the eye 8-Bromoguanosine 3′,5′-cyclic monophosphate may favour transduction of non-R-type photoreceptors.

Cell-permeable cGMP analog having greater resistance to hydrolysis by phosphodiesterases than cGMP. Activates cGMP-dependent protein kinase. Slows or inhibits the intracellular calcium oscillations of tracheal smooth muscle cells in response to acetylcholine. Reported to mimic the effect of nitric oxide generating drugs.

Features and Benefits

This compound is a featured product for Cyclic Nucleotide research. **Click here** to discover more featured Cyclic Nucleotide products. Learn more about bioactive small molecules for other areas of research at **sigma.com/discover-bsm**.

This compound is featured on the **PKA & PKG** page of the Handbook of Receptor Classification and Signal Transduction. To browse other handbook pages, **click here**.

SAFETY INFORMATION

Storage Class Code	WGK	Flash Point(F)	Flash Point(C)
13 - Non Combustible Solids	WGK 3	Not applicable	Not applicable

Personal Protective Equipment
dust mask type N95 (US),
Eyeshields, **Gloves**

DOCUMENTATION

Certificate of Analysis

Enter Lot Number to search for Certificate of Analysis (COA).

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e.g. 023J5431

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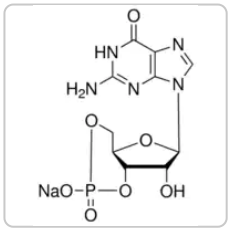


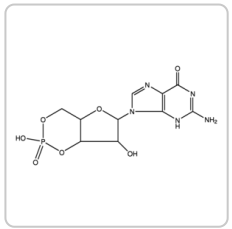
Sigma-Aldrich

G6129

Guanosine 3′,5′-cyclic monophosphate sodium salt

≥99% (HPLC), powder

View Price and Availability



Sigma-Aldrich

G7504

Guanosine 3′,5′-cyclic monophosphate

≥98% (HPLC), powder

View Price and Availability

PEER REVIEWED PAPERS

Nitric oxide-generating vasodilators and 8-bromo-cyclic guanosine monophosphate inhibit mitogenesis and proliferation of cultured rat vascular smooth muscle cells.

U C Garg et al.
The Journal of clinical investigation, 83(5), 1774-1777 (1989-05-01)

Endothelium-derived relaxing factor has been recently identified as nitric oxide. The purpose of this study was to determine if vasodilator drugs that generate nitric oxide inhibit vascular smooth muscle mitogenesis and proliferation in culture. Three chemically dissimilar vasodilators, sodium nitroprusside

8-bromo-cGMP reduces the myofilament response to Ca2+ in intact cardiac myocytes.

Shah AM, et al.
Circulation Research, 74(5), 970-978 (1994)

Cyclic guanosine 3': 5'-monophosphate mimics the effects of light on a circadian pacemaker in the eye of aplysia

Eskin A, et al.
The Journal of Neuroscience, 4(10), 2466-2471 (1984)

Atrial natriuretic peptide regulates adipose tissue accumulation in adult atria.

Nadine Suffee et al.
Proceedings of the National Academy of Sciences of the United States of America, 114(5), E771-E780 (2017-01-18)

The abundance of epicardial adipose tissue (EAT) is associated with atrial fibrillation (AF), the most frequent cardiac arrhythmia. However, both the origin and the factors involved in EAT expansion are unknown. Here, we found that adult human atrial epicardial cells

Endothelial dysfunction enhances the pulmonary and systemic vasodilator effects of phosphodiesterase-5 inhibition in awake swine at rest and during treadmill exercise.

Birgit Houweling et al.
Experimental biology and medicine (Maywood, N.J.), 237(2), 201-210 (2012-02-09)

Cardiovascular disease is characterized by impaired exercise capacity and endothelial dysfunction, i.e. reduced bioavailability of nitric oxide (NO). Phosphodiesterase-5 (PDE5) inhibition is a promising vasodilator therapy, but its effects on pulmonary and systemic hemodynamic responses to exercise in the absence

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Cyclic nucleotides, including cyclic AMP (cAMP), cyclic GMP (cGMP) and cyclic ADP-ribose, have been extensively studied as second messengers of intracellular events initiated by activation of GPCRs. cAMP modifies cell function in all eukaryotic cells, principally through the activation of cAMP-dependent...

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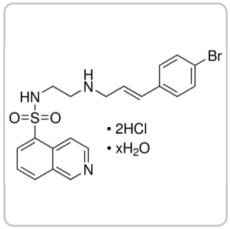


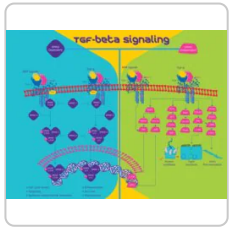
Sigma-Aldrich

B1427

H-89 dihydrochloride hydrate

≥98% (HPLC), powder

View Price and Availability



Sigma-Aldrich

B1434

Bone Morphogenetic Protein 7 human

>95% (SDS-PAGE), recombinant, expressed in CHO cells, lyophilized powder, suitable for cell culture

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