8-Bromo-cAMP sodium salt

Cat. No.: HY-12306

CAS No.: 76939-46-3

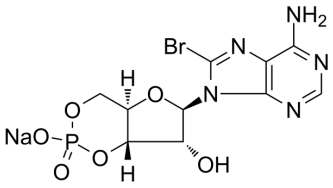
Molecular Formula: $C_{10}H_{10}BrN_5NaO_6P$

Molecular Weight: 430.08

Target: PKA; Apoptosis

Pathway: Stem Cell/Wnt; TGF-beta/Smad; Apoptosis

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 125 mg/mL (290.64 mM)

H_2O : 100 mg/mL (232.51 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3251 mL	11.6257 mL	23.2515 mL
	5 mM	0.4650 mL	2.3251 mL	4.6503 mL
	10 mM	0.2325 mL	1.1626 mL	2.3251 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (232.51 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (4.84 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.84 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.84 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

8-Bromo-cAMP sodium (8-Br-Camp) sodium salt, a cyclic AMP analog, is an activator of cyclic AMP-dependent protein kinase (PKA). 8-Bromo-cAMP sodium salt has anti-proliferative and apoptotic effects against cancer cells[1][2].

IC_{50} & Target

PKA[1]

In Vitro	8-Bromo-cAMP (0.1/0.5 mM) sodium salt enhances the reprogramming efficiency of human neonatal foreskin fibroblast (HFF1) cells, and 0.1 mM of 8-Bromo-cAMP shows a synergistic effect with Valproic acid (HY-10585) (0.5 mM)[1]. 8-Bromo-cAMP (20 μM, 24 and 48 h) sodium salt induces apoptosis in esophageal cancer cell line (Eca-109)[2]. 8-Bromo-cAMP (0.5 mM, 2 days) sodium salt induces decidualization of human endometrial stromal cells[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	8-Bromo-cAMP (60 mg/kg/day, i.p., 7 days) sodium salt reduces tumor in CT26 tumor mice[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	CT26 tumor mice[4]
Dosage:	60 mg/kg/day
Administration:	i.p., 7 days
Result:	Decreases amounts of primary CRC tumor nodules and liver metastases. Reduces vasculogenic mimicry (PAS–CD31 staining of colorectal and intestinal tumors). Inhibits cAMP and VEGF expression, increases expression of PKA in tumor tissues.

CUSTOMER VALIDATION

- Part Fibre Toxicol. 2022 Feb 17;19(1):13.
- Sci Total Environ. 2022 Oct 10;842:156854.
- Cell Mol Life Sci. 2022 Nov 13;79(12):589.
- Cell Oncol. 2023 Mar 20.
- Hum Reprod. 2021 Jan 1;36(1):145-159.

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REFERENCES

[1]. Wang HM, et al. Dual effects of 8-Br-cAMP on differentiation and apoptosis of human esophageal cancer cell line Eca-109. World J Gastroenterol. 2005 Nov 7;11(41):6538-42.

[2]. Baek MO, et al. Differential regulation of mTORC1 and mTORC2 is critical for 8-Br-cAMP-induced decidualization. Exp Mol Med. 2018 Oct 30;50(10):1-11.

[3]. Wang S, et al. Angiogenesis and vasculogenic mimicry are inhibited by 8-Br-cAMP through activation of the cAMP/PKA pathway in colorectal cancer. Onco Targets Ther. 2018 Jul 2;11:3765-3774

[4]. Wang Y, et al. A cyclic AMP analog, 8-Br-cAMP, enhances the induction of pluripotency in human fibroblast cells. Stem Cell Rev. 2011 Jun;7(2):331-41.

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