BzATP triethylammonium salt

Cat. No.: HY-136254

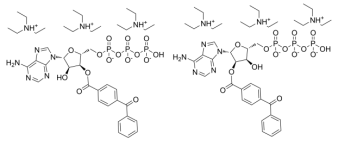
Molecular Formula: $C_{24}H_{24}N_5O_{15}P_3.C_{18}H_{45}N_3$

Molecular Weight: 1018.97

Target: P2X Receptor

Pathway: Membrane Transporter/Ion Channel

Storage: -20°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

H_2O : 50 mg/mL (49.07 mM; Need ultrasonic)
DMSO : 25 mg/mL (24.53 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Concentration \ Solvent Mass	1 mg	5 mg	10 mg
1 mM	0.9814 mL	4.9069 mL	9.8138 mL
5 mM	0.1963 mL	0.9814 mL	1.9628 mL
10 mM	0.0981 mL	0.4907 mL	0.9814 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 (98.14 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (2.45 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.45 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.45 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BzATP triethylammonium salt acts as a P2X receptor agonist with pEC_{50}s of 8.74, 5.26, 7.10, 7.50, 6.19, 6.31, 5.33 for P2X1, P2X2, P2X3, P2X2/3, P2X4 and P2X7, respectively[1]. BzATP triethylammonium salt is potent at P2X7 receptors with EC_{50}s of 3.6 μM and 285 μM for rat P2X7 and mouse P2X7, respectively[2].

IC_{50} & Target	p2x1 Receptor	P2X3 Receptor	P2X4 Receptor	P2X7 Receptor

In Vitro

BzATP (10-1000 μM; 24 h) promotes the proliferation and migration of U87 and U251 glioma cells[3].
P2X7R protein expression is induced by BzATP (100 μM; 6-48 h) in human glioma cells[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[3]

Cell Line:	U87 and U251 glioma cells
Concentration:	5, 10, 50, 100, 500 and 1000 μM
Incubation Time:	2, 6, 12, 24, 48 and 72 hours
Result:	The proliferation of U87 and U251 glioma cell lines was significantly increased in the presence of 10-1000 uM and 100-1000 μM, respectively. The peak of cell proliferation of both U87 and U251 cell lines was at 100 μM. The optimal incubation time is 24 hours in both U87 and U251 cells lines.

Western Blot Analysis[3]

Cell Line:	U87 and U251 glioma cells
Concentration:	100 μM
Incubation Time:	6-48 hours
Result:	Induced the upregulation of P2X7R.

In Vivo

BzATP (5 mg/kg) significantly promotes P2X7R expression in the intestines compared with intestines in the sham group and the control group after cecal ligation and puncture (CLP) induction[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male 2-month-old C57BL/6 mice (each weighing between 20 and 25 g)[4]
Dosage:	5 mg/kg
Administration:	Injected through the intraperitoneal route
Result:	At 48 hours, mice in the treated group and control group exhibited mortalities of 91% and 86%, respectively.

CUSTOMER VALIDATION

- Adv Sci (Weinh). 2025 Jan 30:e2412556.
- ACS Appl Mater Interfaces. 2025 Jan 24.
- Neurobiol Dis. 2025 Jan 28:106817.
- Int J Mol Sci. 2024 Aug 30;25(17):9411.
- Int Immunopharmacol. 2023 Sep 13;124(Pt A):110885.

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REFERENCES

[1]. B R Bianchi, et al. Pharmacological characterization of recombinant human and rat P2X receptor subtypes. Eur J Pharmacol. 1999 Jul 2;376(1-2):127-38.

[2]. Mark T Young, et al. Amino acid residues in the P2X7 receptor that mediate differential sensitivity to ATP and BzATP. Mol Pharmacol. 2007 Jan;71(1):92-100.

[3]. Zhenhua Ji, et al. Involvement of P2X 7 Receptor in Proliferation and Migration of Human Glioma Cells. Biomed Res Int. 2018 Jan 9;2018:8591397.

[4]. Xiuwen Wu, et al. Systemic blockade of P2X7 receptor protects against sepsis-induced intestinal barrier disruption. Sci Rep. 2017 Jun 29;7(1):4364.

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