# Piclidenoson

**Cat. No.:** HY-13591

**CAS No.:** 152918-18-8

**Molecular Formula:** $C_{18}H_{19}IN_6O_4$

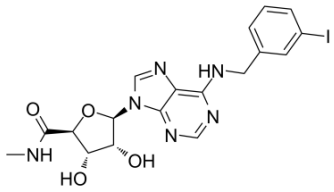
**Molecular Weight:** 510.29

**Target:** Adenosine Receptor; Apoptosis

**Pathway:** GPCR/G Protein; Apoptosis

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 45 mg/mL (88.19 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 1.9597 mL | 9.7983 mL | 19.5967 mL |
| 5 mM | 0.3919 mL | 1.9597 mL | 3.9193 mL |
| 10 mM | 0.1960 mL | 0.9798 mL | 1.9597 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (4.90 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.90 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.90 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Piclidenoson (IB-MECA) is a first-in-class, orally active and selective A3 adenosine receptor (A3AR) agonist. Piclidenoson exhibits antiproliferative effect and induces apoptosis in different cancer cell types like melanoma, leukemia. Piclidenoson can be used for the research of autoimmune inflammatory diseases and COVID-19[1][2][3][4].

**$IC_{50}$ & Target**

A3AR[2]

**In Vitro**

Piclidenoson is able to inhibit Forskolin (HY-15371)-stimulated cAMP levels with $EC_{50}$s of 0.82 μM and 1.2 μM in OVCAR-3 cells and Caov-4 cells, respectively[2].
Piclidenoson (0.0001-100 μM; 48 hours) significantly reduces cell viability in a dose-dependent manner in human ovarian cancer cell lines, with $IC_{50}$s of 32.14 μM and 45.37 μM for OVCAR-3 and Caov-4 cells, respectively[2].
Piclidenoson (0.001-100 μM; 48 hours) induces apoptosis in ovarian cancer cell line through the caspase pathway[2].
Piclidenoson induces apoptosis via the mitochondrial signaling pathway[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[2]

| | |
|---|---|
| Cell Line: | OVCAR-3 cells, Caov-4 cells |
| Concentration: | 0.0001-100 μM |
| Incubation Time: | 48 hours |
| Result: | Resulted in a dose-dependent reduction in the cell viability. |

Apoptosis Analysis[2]

| | |
|---|---|
| Cell Line: | OVCAR-3 cells, Caov-4 cells |
| Concentration: | 0.1 μM, 1 μM, 10 μM, 50 μM, 100 μM |
| Incubation Time: | 48 hours |
| Result: | Significant increased in the percentage of apoptosis in a concentration-dependent manner. |

Western Blot Analysis[2]

| | |
|---|---|
| Cell Line: | OVCAR-3 cells, Caov-4 cells |
| Concentration: | 1 μM, 10 μM, 100 μM |
| Incubation Time: | 48 hours |
| Result: | Decreased the expression of Bcl-2 was noticeably and increased the expression of Bax protein. |

**In Vivo**

Piclidenoson (105 μg/kg; i.p.) enhances survival of γ-irradiated mice[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | B10CBAF1 male mice aged 3 months (average 30 g)[1] |
| Dosage: | 105 μg/kg |
| Administration: | Intraperitoneal injection, 0.5 h after irradiation |
| Result: | Resulted in statistically significant increases of the mean survival time in comparison with the control irradiated mice. |

## REFERENCES

[1]. Hofer M, et al. Agonist of the adenosine A3 receptor, IB-MECA, and inhibitor of cyclooxygenase-2, meloxicam, given alone or in a combination early after total body irradiation enhance survival of γ-irradiated mice. Radiat Environ Biophys. 2014 Mar;53(1):211-215.

[2]. Abedi H, et al. Mitochondrial and caspase pathways are involved in the induction of apoptosis by IB-MECA in ovarian cancer cell lines. Tumour Biol. 2014 Nov;35(11):11027-11039.

[3]. Shin Y, et al. Activation of Phosphoinositide Breakdown and Elevation of Intracellular Calcium in a Rat RBL-2H3 Mast Cell Line by Adenosine Analogs: Involvement of A(3)-Adenosine Receptors? Drug Dev Res. 1996 Sep 1;39(1):36-46.

[4]. Chandan Sarkar, et al. Potential Therapeutic Options for COVID-19: Current Status, Challenges, and Future Perspectives. Front Pharmacol. 2020; 11: 572870.



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