# ZM241385

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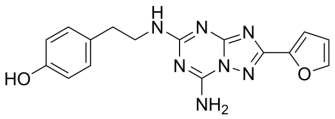
| **Cat. No.:** | HY-19532 |
| **CAS No.:** | 139180-30-6 |
| **Molecular Formula:** | $C_{16}H_{15}N_7O_2$ |
| **Molecular Weight:** | 337.34 |
| **Target:** | Adenosine Receptor |
| **Pathway:** | GPCR/G Protein |
| **Storage:** | Powder -20°C 3 years<br>4°C 2 years<br>In solvent -80°C 2 years<br>-20°C 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 30 mg/mL (88.93 mM)

* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.9644 mL | 14.8218 mL | 29.6437 mL |
| | 5 mM | 0.5929 mL | 2.9644 mL | 5.9287 mL |
| | 10 mM | 0.2964 mL | 1.4822 mL | 2.9644 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: ≥ 2.08 mg/mL (6.17 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (6.17 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (6.17 mM); Clear solution

## BIOLOGICAL ACTIVITY

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| **Description** | ZM241385 is a potent, high affinity and selective adenosine $A_{2a}$ receptor ($A_{2A}R$) antagonist with a $K_i$ value of 1.4 nM[1][2][3]. |
| **$IC_{50}$ & Target** | A2AR<br>1.4 nM (Ki) |
| **In Vitro** | ZM241385 (1 μM; 24-48 hours; PC12 cells) treatment reverses the phenomenon that $A_{2A}R$ agonist CGS21680 significantly |

upregulates $A_{2A}R$ mRNA and protein levels[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[1]

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| Cell Line: | PC12 cells |
| Concentration: | 1 μM |
| Incubation Time: | 24 hours |
| Result: | Suppressed the increased $A_{2A}R$ mRNA levels engendered by CGS21680. |

Western Blot Analysis[1]

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| Cell Line: | PC12 cells |
| Concentration: | 1 μM |
| Incubation Time: | 48 hours |
| Result: | Decreased $A_{2A}R$ protein levels |

**In Vivo**

ZM241385 (0.2 μg/mouse, 0.4 μg/mouse; intraperitoneal injection; every day; for 11 weeks; female C57BL/6 WT mice) treatment decreases tumor volume, activates $CD8^+$ T cells and reduces the frequency of splenic MDSC[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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|---|---|
| Animal Model: | Female C57BL/6 WT mice received 4-nitroquinoline-N-oxide[4] |
| Dosage: | 0.2 μg/mouse, 0.4 μg/mouse |
| Administration: | Intraperitoneal injection; every day; for 11 weeks |
| Result: | Decreased tumor volume, activates $CD8^+$ T cells and reduces the frequency of splenic MDSC. |

## CUSTOMER VALIDATION

- Nat Neurosci. 2023 Apr;26(4):542-554.
- Ecotoxicol Environ Saf. 2022 Dec 12;249:114410.
- J Mol Cell Cardiol. 2022 Dec 3;174:88-100.
- Purinergic Signal. 2022 Jul 2.
- SSRN. 2022.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. Wang Z, et al. Static magnetic field exposure reproduces cellular effects of the Parkinson's disease drugcandidate ZM241385. PLoS One. 2010 Nov 8;5(11):e13883. doi: 10.1371/journal.pone.0013883.

[2]. Linden J, et al. Characterization of human A(2B) adenosine receptors: radioligandbinding, western blotting, and coupling to G(q) in human embryonickidney 293 cells and HMC-1 mast cells. Mol Pharmacol. 1999 Oct;56(4):705-13.

[3]. Poucher SM, et al. The in vitro pharmacology of ZM 241385, a potent, non-xanthine A2a selective adenosinereceptor antagonist. Br J Pharmacol. 1995 Jul;115(6):1096-102.

[4]. Ludwig S, et al. Impact of combination immunochemotherapies on progression of 4NQO-induced murine oral squamous cell carcinoma. Cancer Immunol Immunother. 2019 Jul;68(7):1133-1141.



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