# Fosmanogepix

**Cat. No.:** HY-119726

**CAS No.:** 2091769-17-2

**Molecular Formula:** $C_{22}H_{21}N_4O_6P$

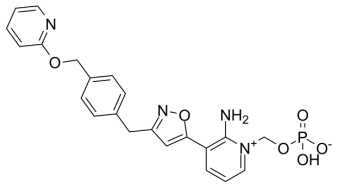
**Molecular Weight:** 468.4

**Target:** Fungal

**Pathway:** Anti-infection

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 2 years |
| | -20°C | 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 5 mg/mL (10.67 mM; ultrasonic and adjust pH to 4 with HCl)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.1349 mL | 10.6746 mL | 21.3493 mL |
| 5 mM | 0.4270 mL | 2.1349 mL | 4.2699 mL |
| 10 mM | 0.2135 mL | 1.0675 mL | 2.1349 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 (5.34 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.34 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Fosmanogepix (APX001) is a broad-spectrum agent against invasive fungal infections. Fosmanogepix (APX001) targets the conserved Gwt1 enzyme required for the localization of glycosylphosphatidylinositol-anchored mannoproteins in fungi. This inhibition prevents the appropriate localization of cell wall mannoproteins, which compromises cell wall integrity, biofilm formation, germ tube formation, and fungal growth. Fosmanogepix (APX001) can be used for invasive fungal infections research[1].

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

Gwt1[1]

**In Vitro**

Fosmanogepix (APX001) (2-0.002 μg/ml, 40-72 h) inhibited the growth of C. neoformans, C. gattii, Candida albicans, and Aspergillus fumigatus with MIC or minimum effective concentration (MEC) values ranging from 0.008-0.25 μg/ml[1].

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

**In Vivo**

Fosmanogepix (APX001) (390 mg/kg for Oral gavage, thrice daily) reduced the fungal burden in mouse cryptococcal meningitis (CM) model[1].
Fosmanogepix (APX001) (100 mg/kg for Oral gavage) is the driver of efficacy in CD-1 mice[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | murine model of cryptococcal meningitis[1] |
| Dosage: | 390 mg/kg |
| Administration: | Oral gavage (p.o.) |
| Result: | Observed significant differences ($P < 0.05$) fungal burden and reduced the fungal burden compared to untreated control in the lung tissue.<br>Reduced the fungal burden of 0.78 $\log_{10}$ CFU/g compared with control group in brain tissue. |

| | |
|---|---|
| Animal Model: | CD-1 mice[1] |
| Dosage: | 100 mg/kg |
| Administration: | Intraperitoneal injection (i.p.) |
| Result: | Extended the half-life of the active moiety, APX001A, from 1.3 to 8.8 h, resulting in a 9-fold increase in the area under the curve (AUC). |

## REFERENCES


[1]. Shaw KJ, et al. In Vitro and In Vivo Evaluation of APX001A/APX001 and Other Gwt1 Inhibitors against Cryptococcus. Antimicrob Agents Chemother. 2018 Jul 27;62(8):e00523-18.

[2]. Gebremariam T, et al. APX001 Is Effective in the Treatment of Murine Invasive Pulmonary Aspergillosis. Antimicrob Agents Chemother. 2019 Jan 29;63(2). pii: e01713-18.

[3]. Shaw KJ, et al. In Vitro and In Vivo Evaluation of APX001A/APX001 and Other Gwt1 Inhibitors against Cryptococcus. Antimicrob Agents Chemother. 2018 Jul 27;62(8). pii: e00523-18.





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