Fanotaprim

Cat. No.: HY-137439

CAS No.: 2120282-75-7

Molecular Formula: $C_{19}H_{22}N_8O$

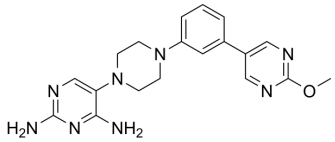
Molecular Weight: 378.43

Target: Antifolate

Pathway: Cell Cycle/DNA Damage

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 : 33.33 mg/mL (88.07 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.6425 mL	13.2125 mL	26.4250 mL
5 mM	0.5285 mL	2.6425 mL	5.2850 mL
10 mM	0.2642 mL	1.3212 mL	2.6425 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 (5.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.50 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fanotaprim is a dihydrofolate reductase (DHFR) inhibitor with IC_{50}s of 1.57 and 308 nM for tgDHFR (Toxoplasma gondii DHFR) and hDHFR (human DHFR), respectively. Fanotaprim has the potential for the research of toxoplasmosis[1].

In Vitro

Fanotaprim shows parasiticidal and antiproliferative effects with EC_{50}s of 13 and 7300 nM against the type I RH strain of T. gondii and MCF-7 cells, respectively[1].

Fanotaprim shows ability to inhibit the growth of T. gondii strains in vitro with EC_{50}s ranging 7.6~ 29.8 nM (GT1, ME49, CTG, RUB and VAND)[1].

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

In Vivo

Fanotaprim (1-10 mg/kg; p.o.; daily; beginning on day 1 through day 7) shows highly effective in control of acute infection by highly virulent strains of T. gondii in the murine model[1].

Fanotaprim (1mg/kg; i.v; mouse) shows C_L, V_d, and $t_{1/2}$ values of 10.6 mL/min/kg, 1.14 L/kg, and 3.9 hours, respectively[1].

Fanotaprim (0.83 mg/kg; p.o; mouse) shows F, C_{max}, T_{max}, and $AUC_{0\text{-}last}$ of 47.3%, 178 ng/mL, 0.05 hours and 750 ng h/mL, respectively[1].

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

Animal Model:	CD-1female mice (murine model of acute toxoplasmosis)[1]
Dosage:	1-10 mg/kg
Administration:	p.o.; daily; beginning on day 1 through day 7
Result:	Mice were monitored for survival for 30 days within termittent IVIS monitoring. At doses of 10 mg/kg Fanotaprim, q.d. or b.i.d. for 7 days, yielded 100% survival for 30 days.

REFERENCES

[1]. Hopper AT, et al. Discovery of Selective Toxoplasma gondii Dihydrofolate Reductase Inhibitors for the Treatment of Toxoplasmosis. J Med Chem. 2019;62(3):1562-1576.

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