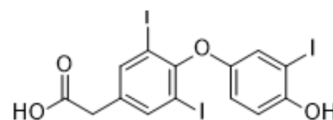


Tiratricol

Cat. No.:	HY-B1201
CAS No.:	51-24-1
Molecular Formula:	C ₁₄ H ₉ I ₃ O ₄
Molecular Weight:	621.93
Target:	Flavivirus; Thyroid Hormone Receptor; TNF Receptor
Pathway:	Anti-infection; Vitamin D Related/Nuclear Receptor; Apoptosis
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 42 mg/mL (67.53 mM)
 * "≥" means soluble, but saturation unknown.

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	1.6079 mL	8.0395 mL	16.0790 mL
5 mM	0.3216 mL	1.6079 mL	3.2158 mL
10 mM	0.1608 mL	0.8039 mL	1.6079 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (4.02 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (4.02 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (4.02 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tiratricol is an orally available thyroid hormone analog that inhibits pituitary thyroid-stimulating hormone secretion. Tiratricol is an intracellular toxin neutralizer that inhibits LPS and lipid A cytotoxicity with IC₅₀s of 20 μM and 32 μM, respectively. Tiratricol reduces TNF production in lipopolysaccharide-stimulated macrophages. Tiratricol also has antiviral activity and is an inhibitor of yellow fever virus (Flavivirus). It can bind to the RdRp domain of the viral NS5 protein to hinder YFV replication.^[2]

In Vitro

Tiratricol (10, 40 μM; 24 h) dose-dependently inhibits YFV infection of Huh-7 cells and also reduces the expression of viral

	<p>non-structural protein (NS3) [2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Huh-7 cells</td> </tr> <tr> <td>Concentration:</td> <td>0.625, 2.5, 10, and 40 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Remarkably suppressed the viral proteins of NS1, NS2B, NS3, prM and capsid.</td> </tr> </table>	Cell Line:	Huh-7 cells	Concentration:	0.625, 2.5, 10, and 40 μ M	Incubation Time:	24 h	Result:	Remarkably suppressed the viral proteins of NS1, NS2B, NS3, prM and capsid.
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In Vivo	<p>Tiratricol (0.2 mg/kg/day; po; 6 days) pretreatment can prevent YFV infection in mice and improve mouse health^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>C57BL/6 mice infected with YFV^[2]</td> </tr> <tr> <td>Dosage:</td> <td>0.2 mg/kg/day</td> </tr> <tr> <td>Administration:</td> <td>po; day 0–6 post infection (dpi) or from 2 days before infection to 6 dpi</td> </tr> <tr> <td>Result:</td> <td>Significantly reduce virus titers and protein expression. Restored body weight and improved the survival rate of YFV-infected mice by 40%.</td> </tr> </table>	Animal Model:	C57BL/6 mice infected with YFV ^[2]	Dosage:	0.2 mg/kg/day	Administration:	po; day 0–6 post infection (dpi) or from 2 days before infection to 6 dpi	Result:	Significantly reduce virus titers and protein expression. Restored body weight and improved the survival rate of YFV-infected mice by 40%.
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REFERENCES

- [1]. Ren H, et al. Tiratricol inhibits yellow fever virus replication through targeting viral RNA-dependent RNA polymerase of NS5. *Antiviral Res.* 2023 Nov;219:105737.
- [2]. Cascales L, et al. Tiratricol neutralizes bacterial endotoxins and reduces lipopolysaccharide-induced TNF-alpha production in the cell. *Chem Biol Drug Des.* 2008 Oct;72(4):320-8.

Caution: Product has not been fully validated for medical applications. For research use only.

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