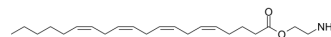


## Virodhamine

<b>Cat. No.:</b>	HY-116418		
<b>CAS No.:</b>	287937-12-6		
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>37</sub> NO <sub>2</sub>		
<b>Molecular Weight:</b>	347.53		
<b>Target:</b>	Endogenous Metabolite; Cannabinoid Receptor		
<b>Pathway:</b>	Metabolic Enzyme/Protease; GPCR/G Protein; Neuronal Signaling		
<b>Storage:</b>	Pure form	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 100 mg/mL (287.74 mM)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent	Mass	1 mg	5 mg	10 mg
	Concentration				
	1 mM		2.8774 mL	14.3872 mL	28.7745 mL
	5 mM		0.5755 mL	2.8774 mL	5.7549 mL
	10 mM		0.2877 mL	1.4387 mL	2.8774 mL

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

### BIOLOGICAL ACTIVITY

#### Description

Virodhamine is an endocannabinoid, it regulates neurotransmission by activating the cannabinoid (CB) receptors. Virodhamine is an antagonist of CB1 receptor and an agonist of CB2 receptor. Virodhamine induces megakaryocytic differentiation by triggering MAPK signaling and ROS production. Virodhamine can be used for the research of various neurological disorders such as Alzheimer's and Parkinson's diseases<sup>[1][2]</sup>.

#### In Vitro

Virodhamine (50 nM; 72 h) increases adherence, membrane expansion and the size of nucleus<sup>[1]</sup>.  
 Virodhamine (10-40 μM; 72 h) increases the expression level of CD61 and TRPV1<sup>[1]</sup>.  
 Virodhamine (72 h) inhibits the cell proliferation of megakaryocyte cells and significantly increases the portion of high ploidy cells as compared to control<sup>[1]</sup>.  
 Virodhamine significantly increases the protein expression level of CB2 receptor, ROS production and NADPH oxidase NOX4 expression in megakaryocytic cells<sup>[1]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.  
 RT-PCR<sup>[1]</sup>

	Cell Line:	Megakaryocyte cell line
	Concentration:	10, 20 and 40 $\mu$ M
	Incubation Time:	72 h
	Result:	Dose-dependently enhanced the expression level of megakaryocytic marker CD61 and the expression of TRPV1 mRNA.
<b>In Vivo</b>	Virodhamine (1-10 mg/kg; i.p. once) repairs the nicotine (0.8 mg/kg) and immobilization stress induced anxiety in vivo <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Male ICR mice with nicotine (0.8 mg/kg) and immobilization stress induced anxiety <sup>[2]</sup>
	Dosage:	1, 5 and 10 mg/kg
	Administration:	Intraperitoneal injection; 1-10 mg/kg; once
	Result:	Significantly repaired the working memory impairment-like behaviors at a dose of 5 mg/kg and showed significant anxiolytic-like effects against the anxiety-like behaviors at a dose of 10 mg/kg.

## REFERENCES

[1]. Sharma DS, et al. Virodhamine, an endocannabinoid, induces megakaryocyte differentiation by regulating MAPK activity and function of mitochondria. *J Cell Physiol.* 2021 Feb;236(2):1445-1453.

[2]. Hayase T. Working memory- and anxiety-related behavioral effects of repeated nicotine as a stressor: the role of cannabinoid receptors. *BMC Neurosci.* 2013 Feb 9;14:20.

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

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