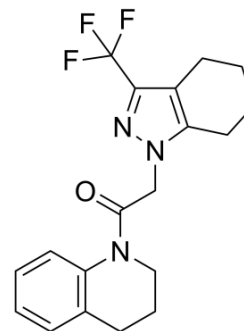


VU041

Cat. No.:	HY-118607		
CAS No.:	332943-64-3		
Molecular Formula:	C ₁₉ H ₂₀ F ₃ N ₃ O		
Molecular Weight:	363.38		
Target:	Potassium Channel; Parasite		
Pathway:	Membrane Transporter/Ion Channel; Anti-infection		
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 : 20 mg/mL (55.04 mM); ultrasonic and warming and heat to 60°C)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.7519 mL	13.7597 mL	27.5194 mL
	5 mM	0.5504 mL	2.7519 mL	5.5039 mL
	10 mM	0.2752 mL	1.3760 mL	2.7519 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 mg/mL (5.50 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: 2 mg/mL (5.50 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2 mg/mL (5.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

VU041 is a first submicromolar-affinity inhibitor of *Anopheles (An.) gambiae* and *Aedes (Ae.) aegypti* inward rectifier potassium 1 (Kir1) channels with IC₅₀ values of 2.5 μM and 1.7 μM, respectively. VU041 inhibits appreciably is mammalian Kir2.1 (IC₅₀ of 12.7 μM), and has less inhibitory effect on mammalian Kir1.1, Kir4.1, Kir6.2/SUR1, and Kir7.1. VU041 also induces impaired Malpighian tubule function^[1].

IC₅₀ & Target

IC₅₀: 2.5 μM (*Anopheles (An.) gambiae* Kir1 channels), 1.7 μM (*Aedes (Ae.) aegypti* Kir1 channels) and 12.7 μM (Mammalian Kir2.1)^[1]

In Vitro	<p>VU041 is only moderately metabolized by cytochrome P450 enzymes and does not appear to be metabolized by esterases. VU041 is the first small-molecule inhibitor of mosquito Kir1 channels that exhibits topical toxicity in both insecticide-susceptible and -resistant lines of mosquitoes^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Topical VU041 application to adult female mosquitoes of both species inhibits their fecundity. Importantly, VU041 is selective for mosquito Kir channels over mammalian Kir channel orthologs and non-lethal to adult honey bees (<i>Apis mellifera</i>). The in vivo experiments of blood meal processing and diuretic capacity suggest that one mechanism of action of VU041 is the disruption of excretory functions mediated by Malpighian tubules^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

[1]. Swale DR, et al. An insecticide resistance-breaking mosquitocide targeting inward rectifier potassium channels in vectors of Zika virus and malaria. *Sci Rep.* 2016 Nov 16;6:36954.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA