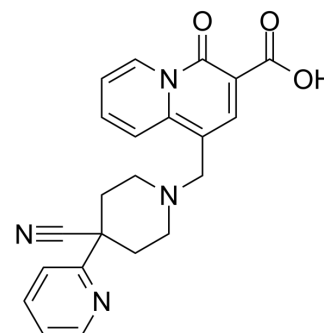


## PQCA

Cat. No.:	HY-118342		
CAS No.:	1144504-35-7		
Molecular Formula:	C <sub>22</sub> H <sub>20</sub> N <sub>4</sub> O <sub>3</sub>		
Molecular Weight:	388.42		
Target:	mAChR		
Pathway:	GPCR/G Protein; Neuronal Signaling		
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 : 10 mg/mL (25.75 mM); ultrasonic and warming and heat to 80°C)					
		Solvent Concentration	Mass	1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM		2.5745 mL	12.8727 mL	25.7453 mL
		5 mM		0.5149 mL	2.5745 mL	5.1491 mL
10 mM			0.2575 mL	1.2873 mL	2.5745 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 1 mg/mL (2.57 mM); Clear solution					

## BIOLOGICAL ACTIVITY

Description	PQCA is a highly selective and potent muscarinic M1 receptor positive allosteric modulator. PQCA has an EC <sub>50</sub> value of 49 nM and 135 nM on rhesus and human M1 receptor, respectively. PQCA is inactive for other muscarinic receptors. PQCA has potential to reduce the cognitive deficits associated with Alzheimer's disease <sup>[1][2]</sup> .
IC <sub>50</sub> & Target	EC <sub>50</sub> : 49 nM (Rhesus M1 receptor) and 135 nM (Human M1 receptor) <sup>[1]</sup>
In Vivo	PQCA (3-30 mg/kg; oral administration; single- or pair-housed male rhesus monkeys) treatment attenuates the scopolamine deficits in PAL and CPT tasks. Blockade of muscarinic signaling by scopolamine produces significant impairments in both tasks <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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Animal Model:	Ten single- or pair-housed male rhesus monkeys (6-10 years old; 5.2-10.5 kg) with scopolamine <sup>[1]</sup>
Dosage:	3 mg/kg, 10 mg/kg, or 30 mg/kg
Administration:	Oral administration
Result:	Attenuated the scopolamine deficits in paired-associates learning (PAL) and the continuous-performance task (CPT).

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## REFERENCES

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[1]. Lange HS, et al. The M1 Muscarinic Positive Allosteric Modulator PQCA Improves Performance on Translatable Tests of Memory and Attention in Rhesus Monkeys. *J Pharmacol Exp Ther.* 2015 Dec;355(3):442-50.

[2]. Uslaner JM, et al. The muscarinic M1 receptor positive allosteric modulator PQCA improves cognitive measures in rat, cynomolgus macaque, and rhesus macaque. *Psychopharmacology (Berl).* 2013 Jan;225(1):21-30.

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

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