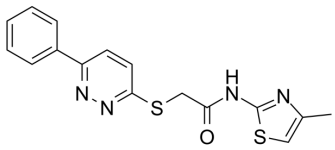
VU 0240551

Cat. No.:	HY-16689
CAS No.:	893990-34-6
Molecular Formula:	$C_{16}H_{14}N_4OS_2$
Molecular Weight:	342.44
Target:	Potassium Channel
Pathway:	Membrane Transporter/Ion Channel
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (146.01 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9202 mL	14.6011 mL	29.2022 mL
	5 mM	0.5840 mL	2.9202 mL	5.8404 mL
	10 mM	0.2920 mL	1.4601 mL	2.9202 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: ≥ 2.5 mg/mL (7.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (7.30 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

VU 0240551 is a potent neuronal K-Cl cotransporter KCC2 inhibitor (IC_{50}=560 nM) and is selective versus NKCC1. VU 0240551 also inhibits hERG and L-type Ca^{2+} channels. VU 0240551 attenuates GABA-induced hyperpolarization of P cells, produces a positive shift in the P cell GABA reversal potential and enhances P cell synaptic transmission[1][2].

In Vitro

VU 0240551 reduces the P cell response to GABA in a concentration-dependent manner with 75 and 100 μM treatments causing a significant reduction in GABA-elicited hyperpolarization while 25 μM had no significant effect[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	VU 0240551 (10 μM) significantly blocks the chloride influx in cells from Eu rats but did not affect cells from SL rats[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Neurosci. 2023 Mar 27.

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REFERENCES

[1]. Delpire E, et al. Small-molecule screen identifies inhibitors of the neuronal K-Cl cotransporter KCC2. Proc Natl Acad Sci U S A. 2009 Mar 31;106(13):5383-8.

[2]. Wang Y, et al. Differential effects of GABA in modulating nociceptive vs. non-nociceptive synapses. Neuroscience. 2015;298:397-409.

[3]. Balapattabi K, et al. Effects of salt-loading on supraoptic vasopressin neurones assessed by ClopHensorN chloride imaging. J Neuroendocrinol. 2019;31(8):e12752.

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