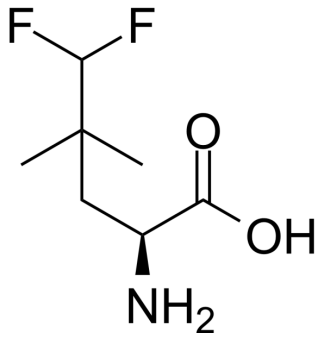
NV-5138

Cat. No.:	HY-114384
CAS No.:	2095886-80-7
Molecular Formula:	$C_7H_{13}F_2NO_2$
Molecular Weight:	181.18
Target:	mTOR
Pathway:	PI3K/Akt/mTOR
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (55.19 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	5.5194 mL	27.5969 mL	55.1937 mL
	5 mM	1.1039 mL	5.5194 mL	11.0387 mL
	10 mM	0.5519 mL	2.7597 mL	5.5194 mL

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

BIOLOGICAL ACTIVITY

Description

NV-5138, a leucine analog, is the first selective and orally active brain mTORC1 activator, binding to Sestrin2. NV-5138 is used for antidepressant studies[1][2].

IC_{50} & Target

mTORC1[1].

In Vivo

NV-5138 is found to be essentially 100% orally bioavailable with an elimination half-life in plasma of ~ 3 h determined following intravenous and oral dosing in rats[1].

NV-5138 (160 mg/kg, po, single dose) rapidly increases levels of phospho-mTOR as well as the downstream targets, phospho-p70S6K1, and phosphor-4EB-P1, in synaptosomal preparations of PFC[2].

NV-5138 (80 mg/kg, po, daily for a total of 7 days) also produces antidepressant effects[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague-Dawley rats weighing 250-260 g[2].
Dosage:	40, 80, 160 mg/kg.

Administration:	PO, single dose (160 mg/kg) or daily for a total of 7 days (40, 80 mg/kg).
Result:	Produced antidepressant effects.

Animal Model:	Male Sprague–Dawley (SD) rats weighed 250-400 g[1].
Dosage:	1 mg/kg, 5 mg/kg (Pharmacokinetic Design).
Administration:	I.V at 1 mg/kg and PO at 5 mg/kg.
Result:	Essentially 100% orally bioavailable with an elimination half-life in plasma of ~ 3 h.

CUSTOMER VALIDATION

- McGill University. 2023 Jul 5.
- bioRxiv. 2023 Apr 24.

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REFERENCES

[1]. Sengupta S, et al. Discovery of NV-5138, the first selective Brain mTORC1 activator. Sci Rep. 2019 Mar 11;9(1):4107.

[2]. Kato T, et al. Sestrin modulator NV-5138 produces rapid antidepressant effects via direct mTORC1 activation. J Clin Invest. 2019 Apr 16;129(6):2542-2554.

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

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