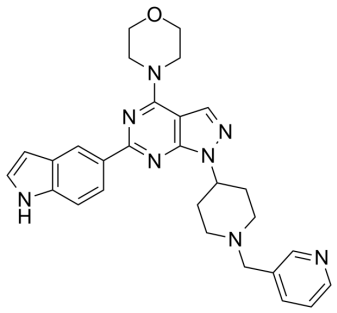
WAY-600

Cat. No.:	HY-15272
CAS No.:	1062159-35-6
Molecular Formula:	$C_{28}H_{30}N_8O$
Molecular Weight:	494.59
Target:	mTOR
Pathway:	PI3K/Akt/mTOR
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 : 25 mg/mL (50.55 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0219 mL	10.1094 mL	20.2188 mL
	5 mM	0.4044 mL	2.0219 mL	4.0438 mL
	10 mM	0.2022 mL	1.0109 mL	2.0219 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 (5.05 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.05 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

WAY-600 is a potent, ATP-competitive, and selective mTOR inhibitor with an IC_{50} of 9 nM for recombinant mTOR enzyme. WAY-600 blocks mTOR complex 1/2 (mTORC1/2) assemble and activation.

IC_{50} & Target

mTOR 9 nM (IC_{50})	mTORC1	mTORC2	PI3K alpha 1.96 μM (IC_{50})
PI3K gamma 8.45 μM (IC_{50})			

In Vitro

WAY-600 exhibits a concentration-dependent and time-dependent inhibition of f HepG2 and Huh-7 cells viability. Following

	WAY-600 (1-1000 nM) treatment, the number of HepG2 cell colonies is dramatically decreased. Meanwhile, BrdU incorporation in HepG2 cells is also inhibited with WAY-600 treatment. WAY-600 dose-dependently increases the activity of caspase-3 and caspase-9 in HepG2 cells. WAY-600 disrupts assemble of mTORC1 (mTOR-Raptor association) and mTORC2 (mTOR-Rictor association). Activation of mTORC1 (indicated by p-S6K1 and p-4E-BP1) and mTORC2 is almost blocked by WAY-600 (100 nM)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Administration of WAY-600 (10 mg/kg, daily) inhibits HepG2 tumor growth in nude mice. Daily HepG2 tumor growth of WAY-600-administrated mice is significantly lower than that of vehicle control mice. Importantly, the in vivo anti-cancer activity by WAY-600 is further potentiated with the co-administration of MEK-162 (2.5 mg/kg, p.o. daily)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	Established HCC cells (HepG2 and Huh-7), primary HCC cells (Pnt-1/-2/-3/-4), or THLE-2 liver cells are cultured in WAY-600 (1-1000 nM)-containing medium for 24, 48, 72, 96 hours, cell viability is tested by MTT assay[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Mice: Mice tumor xenografts are randomly divided into four groups (10 mice per group): vehicle (intraperitoneal or i.p.), WAY-600 (10 mg/kg, i.p. injection), MEK-162 (2.5 mg/kg, oral gavage) or WAY-600 plus MEK-162 combination. The mice are monitored for activity and physical condition on daily basis, and mice body weights and tumor mass are measured weekly[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Theranostics. 2022 Jan 1;12(2):675-688.
- Elife. 2020 Dec 7;9:e61405.
- Front Pharmacol. 2020 Nov 11;11:580407.
- Molecules. 2020 Apr 23;25(8):1980.
- Biochem Biophys Res Commun. 2015 Oct 23;466(3):547-53.

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REFERENCES

[1]. Yu K, et al. Biochemical, cellular, and in vivo activity of novel ATP-competitive and selective inhibitors of the mammalian target of rapamycin. Cancer Res. 2009 Aug 1;69(15):6232-40.

[2]. Wang K, et al. MEK-ERK inhibition potentiates WAY-600-induced anti-cancer efficiency in preclinical hepatocellular carcinoma (HCC) models. Biochem Biophys Res Commun. 2016 May 27;474(2):330-7.

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