Product Data Sheet

Product Name: WAY-600
Cat. No.: GC10583

Chemical Properties

Cas. No.	1062159-35-6		
Chemical Name	4-[6-(1H-indol-5-yl)-1-[1-(pyridin-3-ylmethyl)piperidin-4-yl]pyrazolo[3,4-d]pyrimidin-4-yl]morpholine		
SMILES	C1CN(CCC1N2C3=C(C=N2)C(=NC(=N3)C4=CC5=C(C=C4)NC=C5)N6CCOCC6)CC7=CN=CC=C7		
Formula	$C_{28}H_{30}N_8O$	M.Wt	494.59
Solubility	≥ 12.4mg/mL in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	WAY-600		

Protocol

Cell experiment:	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].
Animal experiment:	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].

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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.

Background

WAY-600 is a potent, ATP-competitive, and selective mTOR inhibitor with an IC50 of 9 nM for recombinant mTOR enzyme. WAY-600 blocks mTOR complex 1/2 (mTORC1/2) assemble and activation.

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].

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].

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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