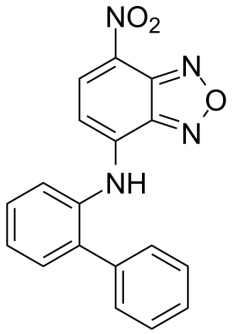
10074-G5

Cat. No.:	HY-100996
CAS No.:	413611-93-5
Molecular Formula:	$C_{18}H_{12}N_4O_3$
Molecular Weight:	332.31
Target:	c-Myc; Autophagy
Pathway:	Apoptosis; Autophagy
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 : ≥ 28 mg/mL (84.26 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0092 mL	15.0462 mL	30.0924 mL
	5 mM	0.6018 mL	3.0092 mL	6.0185 mL
	10 mM	0.3009 mL	1.5046 mL	3.0092 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 (7.52 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.52 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

10074-G5 is an inhibitor of c-Myc-Max dimerization with an IC_{50} of 146 μM.

IC_{50} & Target

IC50: 15.6 μM (Daudi cells), 13.5 μM (HL-60 cells)[1], 146 μM (c-Myc–Max)[2]

In Vitro

10074-G5 inhibits the growth of Daudi Burkitt's lymphoma cells and disruptes c-Myc/Max dimerization. The IC_{50} values against Daudi and HL-60 cells are 15.6 and 13.5 μM, respectively[1]. 10074-G5 binds the Myc peptide Myc353-437 with a K_d value of 2.8 μM in the region Arg363-Ile381. 10074-G5 binds in a cavity that is created by a kink (Asp379-Ile381) in the N-terminus of an induced helical domain (Leu370–Arg378)[3].

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

In Vivo	The plasma half-life of 10074-G5 in mice treated with 20 mg/kg i.v. is 37 min, and peak plasma concentration was 58 μM, which is 10-fold higher than peak tumor concentration[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	10074-G5 is dissolved in DMSO and diluted with culture medium. Daudi cells or HL-60 cells in logarithmic growth are treated with 10074-G5 (1-100 μM). After 72 h, 50 μL of 1 mg/mL MTT is added to each well and incubated for 4 h. At the end of the incubation, medium containing drug and MTT is removed from each well, and 100 μl of DMSO is added, followed by shaking for 5 min. The absorbance at 570 nm is read[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice: C.B-17 SCID mice bearing Daudi xenografts are stratified into the following groups (10 mice/group): control; vehicle control (0.01 ml/g body weight, once daily for 5 days); positive control, doxorubicin (2.5 mg/kg/dose, one dose every 4 days for three doses); and 10074-G5 (20 mg/kg/dose, once daily for 5 days). Mice are dosed intravenously on the appropriate schedule, and body weights and tumor volumes are recorded twice weekly[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Commun Signal. 2022 May 26;20(1):73.

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REFERENCES

[1]. Clausen DM, et al. In vitro cytotoxicity and in vivo efficacy, pharmacokinetics, and metabolism of 10074-G5, a novel small-molecule inhibitor of c-Myc/Max dimerization. J Pharmacol Exp Ther. 2010 Dec;335(3):715-27.

[2]. Chauhan J, et al. Discovery of methyl 4'-methyl-5-(7-nitrobenzo[c][1,2,5]oxadiazol-4-yl)-[1,1'-biphenyl]-3-carboxylate, an improved small-molecule inhibitor of c-Myc-max dimerization. ChemMedChem. 2014 Oct;9(10):2274-85.

[3]. Yap JL, et al. Pharmacophore identification of c-Myc inhibitor 10074-G5. Bioorg Med Chem Lett. 2013 Jan 1;23(1):370-4.

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