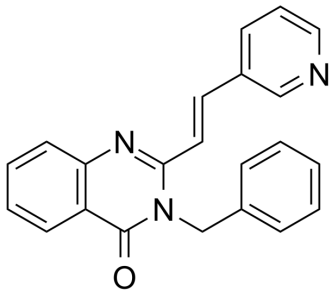
RAD51 Inhibitor B02

Cat. No.:	HY-101462
CAS No.:	1290541-46-6
Molecular Formula:	$C_{22}H_{17}N_3O$
Molecular Weight:	339.39
Target:	RAD51; Apoptosis
Pathway:	Cell Cycle/DNA Damage; Apoptosis
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 : ≥ 37 mg/mL (109.02 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9465 mL	14.7323 mL	29.4646 mL
	5 mM	0.5893 mL	2.9465 mL	5.8929 mL
	10 mM	0.2946 mL	1.4732 mL	2.9465 mL

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

In Vivo

1. Add each solvent one by one: 20% DMSO >> 20% Cremophor EL >> 60% Saline
   Solubility: 10 mg/mL (29.46 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2 mg/mL (5.89 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2 mg/mL (5.89 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

RAD51 Inhibitor B02 (B02) is an inhibitor of human RAD51 with an IC_{50} of 27.4 μM.

IC_{50} & Target

IC50: 27.4 μM (hRAD51)[1]

In Vitro

RAD51 Inhibitor B02 specifically inhibits human RAD51 (IC_{50}=27.4 μM), but not its E. coli homologue RecA (IC_{50}>250 μM)[1]. The combination of B02 with cisplatin has the strongest killing effect on the human breast cancer cells MDA-MB-231[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	B02 significantly enhances the therapeutic effect of cisplatin on tumor cells in vivo. B02 is tolerated by mice at doses up to 50 mg/kg without obvious body weight loss. No inhibition of tumor growth is observed on mice solely treated by B02. Mice treated with 4 mg/kg cisplatin, however, shows a 33% inhibition of tumor growth. Finally, mice treated with 50 mg/kg B02 and 4 mg/kg cisplatin shows a 66% inhibition of tumor growth[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	The cells are exposed for 1 h, then the cells are ished by PBS three times and refreshed by the media containing B02 (5 μM). After 7-10 days, cells are fixed and stained with staining solution (0.05% crystal violet, 50% methanol in PBS); finally cell colonies are counted[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Mice: Cisplatin and B02 are dissolved in NS and cremophor/DMSO/NS (1:1:3) vehicle, respectively, immediately before injection. In a combination treatment group, the mice are injected with B02 (50 mg/kg or indicated otherwise) and cisplatin (4 mg/kg or indicated otherwise). In B02 group, mice are injected with B02 and NS; in cisplatin group, mice are injected with cisplatin and B02 vehicle. Cisplatin (or NS) is administrated 3 h after B02 (or its vehicle) injection. All the treatments are executed through I.P. injections on day 11, 13, 15 and 17 after tumor cells inoculations[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cancer Lett. 2023 Feb 15;558:216092.
- Cancer Lett. 2021 Aug 10;S0304-3835(21)00395-5.
- Oncogene. 2023 Mar 11.
- Cancers (Basel). 2021 Apr 21;13(9):1998.
- Cell Signal. 2023 Feb 24;110639.

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REFERENCES

[1]. Huang F, et al. Identification of specific inhibitors of human RAD51 recombinase using high-throughput screening. ACS Chem Biol. 2011 Jun 17;6(6):628-35.

[2]. Huang F, et al. A small molecule inhibitor of human RAD51 potentiates breast cancer cell killing by therapeutic agents in mouse xenografts. PLoS One. 2014 Jun 27;9(6):e100993.

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