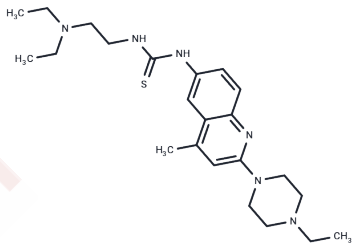
Data Sheet (Cat.No.T10936)

TargetMol

D-I03

Chemical Properties



CAS No. : 688342-78-1

Formula: C23H36N6S

Molecular Weight: 428.64

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	D-I03 is a selective RAD52 inhibitor with a Kd of 25.8 μM. It specifically inhibits RAD52-dependent single-chain annealing (SSA) and D-loop formation, with IC50 values of 5 μM and 8 μM, respectively. D-I03 also inhibits the growth of BRCA1 and BRCA2 deficient cells and prevents the formation of damage-induced RAD52 foci, but does not affect RAD51 foci induced by Cisplatin.
Targets(IC50)	DNA/RNA Synthesis
In vitro	D-IO3 (0-10 μM; on Days 1 and 3; Capan-1 and UWB1.289 cells) treatment preferentially inhibited the growth of Capan-1 and UWB1.289 cells in a concentration-dependent manner . D-IO3 inhibited cisplatin-induced RAD52 foci formation in the BCR-ABL1-positive BRCA1-deficient 32Dcl3 mouse hematopoietic cell line expressing GFP-RAD52. In the presence of D-IO3 (2.5 μM), the proportion of cells with RAD52 lesions decreased from 38.7% to 171%; meanwhile, the proportion of cisplatin-treated cells without lesions increased from 48.4% to 71.9%. D-IO3 had no effect on cisplatin-induced RAD51 foci. Similarly, D-I03 alone (in BRCA1-deficient cells) induced neither RAD51 nor RAD52 lesions, indicating that D-I03 has low genotoxicity[1].
In vivo	D-IO3 (50 mg / kg / day; intraperitoneal injection; daily; 7 consecutive days; nu / nu mice) treatment can reduce the growth of BRCA1-deficient MDA-MB-436 tumors. Talazoparib puls D-I03 does not cause any obvious toxicity to normal tissues and organs, and does not affect the growth of BRCA1-positive tumors. Pharmacokinetic and toxicity studies have shown that the maximum tolerated dose of D-I03 is ≥50mg / kg and t1 / 2 is 23.4 hours, resulting in a maximum concentration in peripheral blood> 1μM[1].

Solubility Information

Solubility	DMSO: 90 mg/mL (209.97 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (7.7 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.333 mL	11.6648 mL	23.3296 mL
5 mM	0.4666 mL	2.333 mL	4.6659 mL
10 mM	0.2333 mL	1.1665 mL	2.333 mL
50 mM	0.0467 mL	0.2333 mL	0.4666 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Huang F, et al. Targeting BRCA1- and BRCA2-deficient cells with RAD52 small molecule inhibitors. Nucleic Acids Res. 2016 May 19;44(9):4189-99.
Hengel SR, et al. Small-Molecule Inhibitors Targeting DNA Repair and DNA Repair Deficiency in Research and Cancer Therapy. Cell Chem Biol. 2017 Sep 21;24(9):1101-1119.
Sullivan-Reed K, et al. Simultaneous Targeting of PARP1 and RAD52 Triggers Dual Synthetic Lethality in BRCA-Deficient Tumor Cells. Cell Rep. 2018 Jun 12;23(11):3127-3136.