PARP1/BRD4-IN-2

BIOLOGICAL ACTIVITY

Description

MedChemExpress

®

Cat. No.:	HY-150613	
Molecular Formula:	$C_{25}H_{20}N_4O_4$	
Molecular Weight:	440.45	
Target:	Epigenetic Reader Domain; PARP; Apoptosis	
Pathway:	Epigenetics; Cell Cycle/DNA Damage; Apoptosis	NH NH
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.	,o ⊓



Product Data Sheet

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Y			
PARP1/BRD4-IN-2 is a potent a PARP1/BRD4-IN-2 inhibits DNA tumor activity in MDA-MB-468 c cancer (TNBC) ^[1] .	nd selective PARP1 and BRD4 inhibitor w damage repair, arrests G0/G1 transition xenograft mouse model. PARP1/BRD4-IN	vith IC ₅₀ values of 197 nM and 238 nM, respe and induces apoptosis. PARP1/BRD4-IN-2 h -2 can be used for researching triple-negati	ctively. nas anti- ve breast
BRD4 238 nM (IC ₅₀)	PARP1 197 nM (IC ₅₀)		
PARP1/BRD4-IN-2 (compound stability ^[1] . PARP1/BRD4-IN-2 has antiproli 3.01±0.83 µM, respectively ^[1] . PARP1/BRD4-IN-2 (5, 10, and 20 colony formation and promote PARP1/BRD4-IN-2 (5, 10, and 20 dependently; causes DNA dam MCE has not independently co	BP44) can directly bind to BRD4 and PAR iferative activity against MDA-MB-231 and 0 μM) down-regulates Bcl-2 and up-regul es cell apoptosis in MDA-MB-468 cells ^[1] . 0 μM) down-regulates DNA damage-relat age repair defects by down-regulating Ra nfirmed the accuracy of these methods.	P1 in MDA-MB-468 cells and improve their t d MDA-MB-468 with IC ₅₀ s of 6.61 \pm 0.58 μ M ar lates Bax and cleaved caspase3 at 20 μ M; in red proteins CtIP, Mre11, Rad51, and p-RPA3 ad51 and p-RPA32 ^[1] . They are for reference only.	hermal nd hibits 32 dose-
PARP1/BRD4-IN-2 (40 and 80 m significant toxicities, and signif Pharmacokinetic Parameters c	ng/kg; IG, for 16 days) significantly inhibit ficantly down-regulates the expression of of PARP1/BRD4-IN-2 in Sprague-Dawley ra	ts tumor growth in xenograft mice and with f CtIP, c-Myc, PAR, and Rad51 in tumor tissuats ^[1] .	out ıes ^[1] .
	IV (1 mg/kg)	PO (10 mg/kg)	

	PARP1/BRD4-IN-2 inhibits DN/ tumor activity in MDA-MB-468 cancer (TNBC) ^[1] .	A damage repair, arrests G0/G1 transitior xenograft mouse model. PARP1/BRD4-IN	n and induces apoptosis. PARP1/BRD4-IN-2 ha N-2 can be used for researching triple-negativ	as anti- ′e breast	
IC ₅₀ & Target	BRD4 238 nM (IC ₅₀)	PARP1 197 nM (IC ₅₀)			
In Vitro	 PARP1/BRD4-IN-2 (compound BP44) can directly bind to BRD4 and PARP1 in MDA-MB-468 cells and improve their thermal stability^[1]. PARP1/BRD4-IN-2 has antiproliferative activity against MDA-MB-231 and MDA-MB-468 with IC₅₀s of 6.61±0.58 μM and 3.01±0.83 μM, respectively^[1]. PARP1/BRD4-IN-2 (5, 10, and 20 μM) down-regulates Bcl-2 and up-regulates Bax and cleaved caspase3 at 20 μM; inhibits colony formation and promotes cell apoptosis in MDA-MB-468 cells^[1]. PARP1/BRD4-IN-2 (5, 10, and 20 μM) down-regulates DNA damage-related proteins CtIP, Mre11, Rad51, and p-RPA32 dose-dependently; causes DNA damage repair defects by down-regulating Rad51 and p-RPA32^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. 				
In Vivo	PARP1/BRD4-IN-2 (40 and 80 mg/kg; IG, for 16 days) significantly inhibits tumor growth in xenograft mice and without significant toxicities, and significantly down-regulates the expression of CtIP, c-Myc, PAR, and Rad51 in tumor tissues ^[1] . Pharmacokinetic Parameters of PARP1/BRD4-IN-2 in Sprague-Dawley rats ^[1] .				
		IV (1 mg/kg)	PO (10 mg/kg)		
	T _{1/2} (h)	3.02 ± 0.57	3.33 ± 0.71		
	C _{max} (ng/mL)	258 ± 11	242 ± 6		
	AUC _{0-t} (ng/mL·h)	629 ± 49	1489 ± 130		
	AUC _{0-∞} (ng/mL·h)	642 ± 36	1530 ± 146		

V _Z (L/kg) 21.1 ± 2.6	
CL (mL/min	/kg) 33.7 ± 1.5	
F (%)	23.8 ± 1.3	
MCE has not independe	ently confirmed the accuracy of these methods. They are for reference only.	
Animal Model:	Female BALB/c nude mice (implanted subcutaneously with MDA-MB-468 tumor cells) $^{[1]}$	
Dosage:	40 and 80 mg/kg	
Administration:	IG, for 16 days	
Result:	Significantly inhibited tumor growth and exhibits no significant toxicities; and significant down-regulated the expression of CtIP, c-Myc, PAR, and Rad51 in tumor tissues.	

REFERENCES

[1]. Zhang J, et al. Discovery of 4-Hydroxyquinazoline Derivatives as Small Molecular BET/PARP1 Inhibitors That Induce Defective Homologous Recombination and Lead to Synthetic Lethality for Triple-Negative Breast Cancer Therapy. J Med Chem. 2022 May 12;65(9):6803-6825.

Caution: Product has not been fully validated for medical applications. For research use only.

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