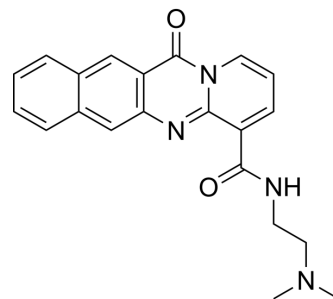


BMH-21

Cat. No.:	HY-12484		
CAS No.:	896705-16-1		
Molecular Formula:	C ₂₁ H ₂₀ N ₄ O ₂		
Molecular Weight:	360		
Target:	DNA/RNA Synthesis		
Pathway:	Cell Cycle/DNA Damage		
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 : 1 mg/mL (2.78 mM; Need ultrasonic)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	2.7778 mL	13.8889 mL	27.7778 mL
5 mM	---	---	---
10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

BMH-21 is a first-in-class DNA intercalator which inhibits RNA polymerase I (Pol I) transcription. BMH-21 possesses anticancer activity^{[1][2]}.

IC₅₀ & Target

DNA^{[1][2]}

In Vitro

BMH-21 binds ribosomal DNA and inhibits Pol I transcription^[1].
 ?BMH-21 inhibits RNA polymerase I independent of DNA damage response^[1].
 ?BMH-21 intercalates into double strand (ds) DNA and has binding preference towards GC-rich DNA sequences^[1].
 ?BMH-21 (1 μM; 3 hours) acts in a DNA damage independent manner to activate nucleolar stress and RPA194 degradation^[1].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.
 Cell Viability Assay^[1]

Cell Line:	U2OS cells
Concentration:	0 μM, 0.1 μM, 1 μM, 10 μM

Incubation Time:	48 hours
Result:	Decreased the viability of cells at concentrations that activated the DNA damage response.

Western Blot Analysis^[1]

Cell Line:	A375 cells
Concentration:	1 μ M
Incubation Time:	3 hours
Result:	Degraded RPA194 with blocked ATM and DNA-PK _{CS} activity.

In Vivo

BMH-21 (50 mg/kg; i.p.; daily; for 6 days) inhibits HCT116 colon cancer tumor growth in vivo^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	6-week old athymic NCr nu/nu mice, with HCT116 colorectal carcinoma xenograft ^[2]
Dosage:	50 mg/kg
Administration:	Intraperitoneal injection, daily, for 6 days
Result:	Significantly inhibited HCT116 colon cancer tumor growth.

CUSTOMER VALIDATION

- Curr Biol. 2021 Apr 8;S0960-9822(21)00380-8.
- J Cell Biol. 2023 Jan 2;222(1):e202202110.
- J Mol Med (Berl). 2019 Aug;97(8):1183-1193.
- Mol Biol Cell. 2023 Mar 29;mbcE22110518.

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REFERENCES

[1]. Colis L, et al. DNA intercalator BMH-21 inhibits RNA polymerase I independent of DNA damage response. Oncotarget. 2014 Jun 30;5(12):4361-9.

[2]. Karita Peltonen, et al. A Targeting Modality for Destruction of RNA Polymerase I that Possesses Anticancer Activity. Cancer Cell. 2014 Jan 13; 25(1): 77–90.

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

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