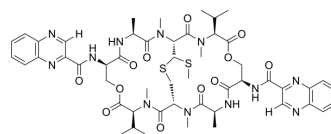


Echinomycin

Cat. No.:	HY-106101
CAS No.:	512-64-1
Molecular Formula:	C ₅₁ H ₆₄ N ₁₂ O ₁₂ S ₂
Molecular Weight:	1101.26
Target:	HIF/HIF Prolyl-Hydroxylase; Antibiotic; Bacterial
Pathway:	Metabolic Enzyme/Protease; Anti-infection
Storage:	-20°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 5.3 mg/mL (4.81 mM; Need ultrasonic)

Solvent	Mass	Concentration		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	0.9081 mL	4.5403 mL	9.0805 mL
	5 mM	---	---	---
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Echinomycin (Quinomycin A) is potent small-molecule and cell-permeable inhibitor of hypoxia-inducible factor-1 (HIF-1) DNA-binding activity. Echinomycin selectively inhibits the cancer stem cells (CSCs) with an IC₅₀ of 29.4 pM^{[1][2]}.

In Vitro

Echinomycin (0-10 nM; 16 hours; U251 cells) treatment significantly inhibits hypoxia-induced VEGF mRNA expression in a dose-dependent fashion. Echinomycin very potently inhibits hypoxic induction of luciferase expression in U251-HRE in a dose-dependent fashion with an EC₅₀ of 1.2 nM^[1].

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

RT-PCR^[1]

Cell Line:	U251 cells
Concentration:	0 nM, 0.625 nM, 1.25 nM, 5 nM, 10 nM
Incubation Time:	16 hours
Result:	Significantly inhibited VEGF mRNA expression induced by hypoxia in a dose-dependent fashion.

In Vivo

Echinomycin (10 µg/kg; intravenous injection; for 40 days; NOD-SCID mice) treatment efficiently eradicates mouse lymphoma and serially transplantable human acute myeloid leukemia (AML) in xenogeneic model by preferential elimination of cancer stem cells (CSCs). HIF1α maintains mouse lymphoma CSCs by repressing a negative feedback loop in the Notch pathway^[2].

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

Animal Model:	NOD-SCID mice received 1.8Gy of irradiation and i.v. injection with peripheral blood cells from patients AML-71 and AML-150 ^[2]
Dosage:	10 µg/kg
Administration:	Intravenous injection; for 40 days
Result:	Efficiently eradicated mouse lymphoma and serially transplantable human AML in xenogeneic model by preferential elimination of CSCs.

CUSTOMER VALIDATION

- Theranostics. 2022 Apr 4;12(7):3196-3216.
- Theranostics. 2022 Jan 16;12(4):1621-1638.
- Oncol Rep. 2023 Dec;50(6):219.

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REFERENCES

[1]. Kong D, et al. Echinomycin, a small-molecule inhibitor of hypoxia-inducible factor-1 DNA-binding activity. *Cancer Res.* 2005 Oct 1;65(19):9047-55.

[2]. Wang Y, et al. Targeting HIF1α eliminates cancer stem cells in hematological malignancies. *Cell Stem Cell.* 2011 Apr 8;8(4):399-411.

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

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