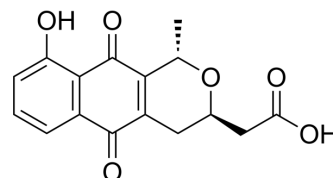


## Nanaomycin A

<b>Cat. No.:</b>	HY-103397	
<b>CAS No.:</b>	52934-83-5	
<b>Molecular Formula:</b>	C <sub>16</sub> H <sub>14</sub> O <sub>6</sub>	
<b>Molecular Weight:</b>	302.28	
<b>Target:</b>	DNA Methyltransferase; Parasite	
<b>Pathway:</b>	Epigenetics; Anti-infection	
<b>Storage:</b>	Powder	-20°C 3 years
	In solvent	-80°C 6 months
		-20°C 1 month



### SOLVENT & SOLUBILITY

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (8.27 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Nanaomycin A is the first selective DNMT3B inhibitor with an IC<sub>50</sub> of 500 nM. Nanaomycin A, a quinone antibiotics, reactivates silenced tumor suppressor genes in human cancer cells<sup>[1]</sup>. Nanaomycin A inhibits in vitro growth of the human malaria parasite Plasmodium falciparum with an IC<sub>80</sub> value of 33.1 nM<sup>[2]</sup>.

#### IC<sub>50</sub> & Target

DNMT3B 500 nM (IC <sub>50</sub> )	Plasmodium
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#### In Vitro

Nanaomycin A (10-10000 nM; 72 hours) has a distinct cytotoxic effect in all three cell lines<sup>[1]</sup>.  
 Nanaomycin A (0.5, 5 μM; 72 hours) reveals induction of RASSF1A protein expression in A549 cells<sup>[1]</sup>.  
 Nanaomycin A (5 μM; 72 hours) has an 18-fold relative induction<sup>[1]</sup>.  
 Nanaomycin A not affects the enzymatic activity of DNMT1<sup>[1]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.  
 Cell Cytotoxicity Assay<sup>[1]</sup>

Cell Line:	HCT116 (colon), A549 (lung), and HL60 (bone marrow) human tumor cell lines
Concentration:	10, 100, 1000, 10000 nM
Incubation Time:	72 hours
Result:	Had a distinct cytotoxic effect in all three cell lines.

Western Blot Analysis<sup>[1]</sup>

Cell Line:	A549 cells
Concentration:	0.5, 5 $\mu$ M
Incubation Time:	72 hours
Result:	Revealed induction of RASSF1A protein expression.

#### RT-PCR<sup>[1]</sup>

Cell Line:	A549 cells
Concentration:	5 $\mu$ M
Incubation Time:	72 hours
Result:	Had an 18-fold relative induction.

## CUSTOMER VALIDATION

- Antioxid Redox Signal. 2021 Jul;35(1):1-20.
- bioRxiv. 2023 Jan 31.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Kuck D, et al. Nanaomycin A selectively inhibits DNMT3B and reactivates silenced tumor suppressor genes in human cancer cells. *Mol Cancer Ther.* 2010 Nov;9(11):3015-23.

[2]. Tanaka Y, et al. Heme-dependent radical generation: possible involvement in antimalarial action of non-peroxide microbial metabolites, nanaomycin A and radicicol. *J Antibiot (Tokyo).* 1999 Oct;52(10):880-8.

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

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