

## Neocarzinostatin

Cat. No.:	HY-111183		
CAS No.:	9014-02-2		
Target:	DNA/RNA Synthesis; Bacterial; Apoptosis; Antibiotic		
Pathway:	Cell Cycle/DNA Damage; Anti-infection; Apoptosis		
Storage:	Powder	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month

## Neocarzinostatin

### BIOLOGICAL ACTIVITY

<b>Description</b>	Neocarzinostatin, a potent DNA-damaging, anti-tumor antibiotic, recognizes double-stranded DNA bulge and induces DNA double strand breaks (DSBs). Neocarzinostatin induces apoptosis. Neocarzinostatin has potential for EpCAM-positive cancers treatment <sup>[1][2]</sup> .
<b>In Vitro</b>	<p>The EpCAM aptamer conjugated Neocarzinostatin (NCS) shows specificity to EpCAM-positive cells. The effects of the conjugates on cancer cells are impressive as the conjugate arrests the cell cycle and promoted apoptosis and necrosis. The high levels of PARP expression confirmed the DNA breaks upon conjugate treatment. NCS conjugated with EpCAM can be targeted to cancer cells sparing normal cells<sup>[3]</sup>.</p> <p>The IC<sub>50</sub> values of Neocarzinostatin (72 hours) to C6 cells and U87MG cells were 493.64 nM, 462.96 nM, respectively<sup>[4]</sup>. In human tumor cell lines of different tissue origins, sensitivity to neocarzinostatin is proportional to the product of the relative contents of Bcl-2 and caspase-3<sup>[5]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

### REFERENCES

- [1]. Athyala PK, et al. Probing the biophysical interaction between Neocarzinostatin toxin and EpCAM RNA aptamer. *Biochem Biophys Res Commun*. 2016 Jan 8;469(2):257-62.
- [2]. Allen Taylor, et al. Ubiquitination capabilities in response to neocarzinostatin and H2O2 stress in cell lines from patients with ataxia-telangiectasia. *Oncogene* (2002) 21, 4363- 4373.
- [3]. Athyala PK, et al. Neocarzinostatin, Aptamer Conjugates for Targeting EpCAM-positive Tumor Cells. *Anticancer Res*. 2017 Jul;37(7):3615-3629.
- [4]. Tianqin G, et al. Synergistic Anti-glioma Effects in Vitro and in Vivo of Eneidiyne Antibiotic Neocarzinostatin and Paclitaxel via Enhanced Growth Delay and Apoptosis-Induction. *Biol Pharm Bull*. 2016 Oct 1;39(10):1623-1630.
- [5]. Rogers D, et al. Molecular predictors of human nervous system cancer responsiveness to enediyne chemotherapy.

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

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