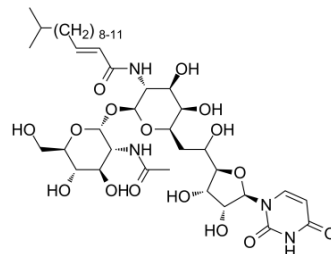


## Tunicamycin

Cat. No.:	HY-A0098	
CAS No.:	11089-65-9	
Molecular Formula:	C <sub>39</sub> H <sub>64</sub> N <sub>4</sub> O <sub>16</sub>	
Target:	Bacterial; Fungal; Influenza Virus; Antibiotic	
Pathway:	Anti-infection	
Storage:	Powder	-20°C 3 years
	In solvent	-80°C 6 months
		-20°C 1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 40 mg/mL (Need ultrasonic) H <sub>2</sub> O : < 0.1 mg/mL (insoluble)
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2 mg/mL (Infinity mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2 mg/mL (Infinity mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2 mg/mL (Infinity mM); Clear solution</li> </ol>

### BIOLOGICAL ACTIVITY

<b>Description</b>	Tunicamycin is a mixture of homologous nucleoside antibiotic that inhibits N-linked glycosylation and blocks GlcNAc phosphotransferase (GPT). Tunicamycin causes accumulation of unfolded proteins in cell endoplasmic reticulum (ER) and induces ER stress, and causes blocking of DNA synthesis and cell cycle arrest in G1 phase. Tunicamycin inhibits gram-positive bacteria, yeasts, fungi, and viruses and has anti-cancer activity <sup>[1][2][3]</sup> . Tunicamycin increases exosome release in cervical cancer cells <sup>[4]</sup> .				
<b>In Vitro</b>	<p>Tunicamycin (2 μg/mL; 24 hours; CD44+/CD24- and original MCF7 cells) treatment increases the spliced XBP-1, ATF6 nuclear translocation level and CHOP protein expression in CD44+/CD24- and original MCF7 cells<sup>[1]</sup>.</p> <p>Tunicamycin-induced ER stress suppresses CD44+/CD24- phenotype cell subpopulation and in vitro invasion and accelerates tumorosphere formation. Under effect of Tunicamycin, the results show that inhibited invasion, increased cell death, suppressed proliferation and reduced migration in the CD44+/CD24- and CD44+/CD24- rich MCF7 cell culture<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis</p> <table border="1"> <tr> <td>Cell Line:</td> <td>CD44+/CD24- and original MCF7 cells<sup>[1]</sup></td> </tr> <tr> <td>Concentration:</td> <td>2 μg/mL</td> </tr> </table>	Cell Line:	CD44+/CD24- and original MCF7 cells <sup>[1]</sup>	Concentration:	2 μg/mL
Cell Line:	CD44+/CD24- and original MCF7 cells <sup>[1]</sup>				
Concentration:	2 μg/mL				

	Incubation Time:	24 hours
	Result:	Increased level of spliced XBP-1, ATF6 nuclear translocation and CHOP protein expression are detected in CD44+/CD24- and original MCF7 cells.
<b>In Vivo</b>	Tunicamycin (0.1 mg/kg or 0.5 mg/kg) treatment dramatically suppresses tumor growth in the CD133 <sup>±</sup> MHCC97L cells xenograft model (BALB/c (nu/nu) mice) <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

## CUSTOMER VALIDATION

- Nature. 2020 Mar;579(7799):433-437.
- Autophagy. 2020 May 23;1-22.
- Cancer Res. 2020 Sep 15;80(18):3892-3905.
- Cell Rep. 2019 Nov 19;29(8):2229-2242.e4.
- PLoS Biol. 2018 Oct 18;16(10):e2006483.

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

## REFERENCES

- [1]. Hsu JL, et al. Tunicamycin induces resistance to camptothecin and etoposide in human hepatocellular carcinoma cells: role of cell-cycle arrest and GRP78. Naunyn Schmiedebergs Arch Pharmacol. 2009 Nov;380(5):373-82.
- [2]. Han C, et al. Endoplasmic reticulum stress inhibits cell cycle progression via induction of p27 in melanoma cells. Cell Signal. 2013 Jan;25(1):144-9.
- [3]. Hou H, et al. DPAGT1/Akt/ABCG2 pathway in mouse Xenograft models of human hepatocellular carcinoma. Mol Cancer Ther. 2013 Dec;12(12):2874-84.
- [4]. Kathleen M McAndrews, et al. Mechanisms associated with biogenesis of exosomes in cancer. Mol Cancer. 2019 Mar 30;18(1):52.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA