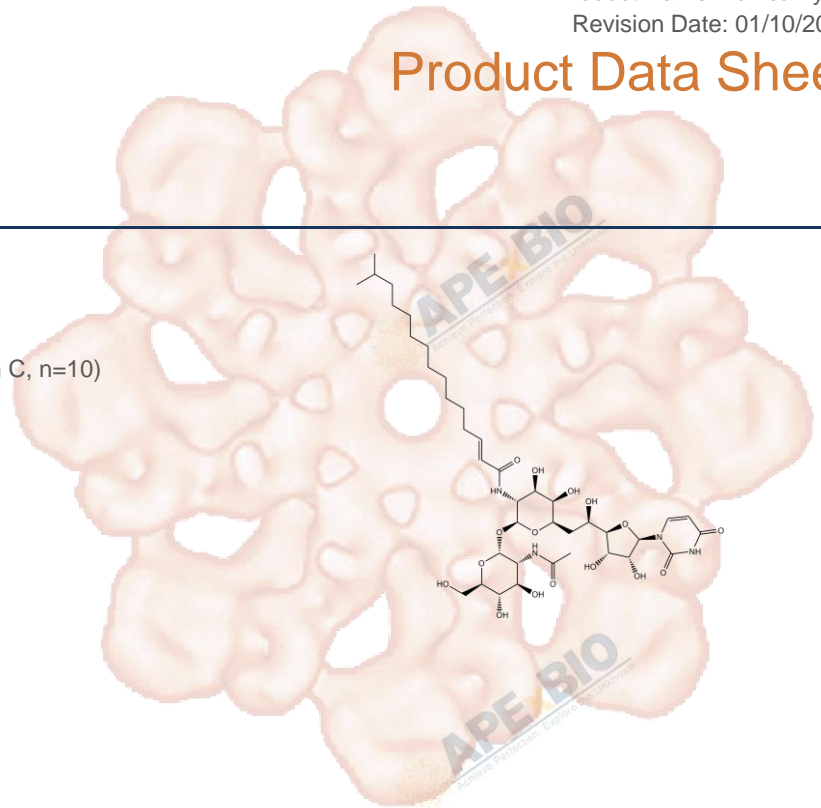


# Product Data Sheet

## Tunicamycin

<b>Cat. No.:</b>	B7417
<b>CAS No.:</b>	11089-65-9
<b>Formula:</b>	C <sub>39</sub> H <sub>64</sub> N <sub>4</sub> O <sub>16</sub> (tunicamycin C, n=10)
<b>M.Wt:</b>	844.95
<b>Synonyms:</b>	
<b>Target:</b>	Metabolism
<b>Pathway:</b>	Transferase
<b>Storage:</b>	Store at -20°C



### Solvent & Solubility

≥25 mg/mL in DMSO

In Vitro

Preparing Stock Solutions	Solvent	Mass		
		1mg	5mg	10mg
	<b>Concentration</b>			
	<b>1 mM</b>	1.1835 mL	5.9175 mL	11.8350 mL
	<b>5 mM</b>	0.2367 mL	1.1835 mL	2.3670 mL
	<b>10 mM</b>	0.1184 mL	0.5918 mL	1.1835 mL

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

### Biological Activity

Shortsummary

antibiotic, inhibits GlcNAc phosphotransferase (GPT)

IC<sub>50</sub> & Target

In Vitro

#### Cell Viability Assay

Cell Line:	RAW264.7 cells
Preparation method:	The solubility of this compound in DMSO is >25 mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting conditions:	48 h, 0.5 µg/mL

	Applications:	In RAW264.7 cells, tunicamycin significantly reduced LPS-induced nitrite release/production and attenuated the expression of mRNAs and hence proteins of COX-2 and iNOS. Tunicamycin at a concentration of 0.5 µg/mL did not have any effect on cell survival/proliferation, but at 48 h tunicamycin provided protection against activation-induced macrophage cell death. In a concentration-dependent manner, tunicamycin reduced COX-2 and iNOS protein expression in response to LPS and induced a concurrent increase in 78-kDa glucose-regulated protein (GRP78), an ER (endoplasmic reticulum) chaperone.
In Vivo	<b>Animal experiment</b>	
	Animal models:	C57BL/6J Nrf2 (+/+; wildtype) and C57BL/6J/Nrf2(-/-; knockout) mice
	Dosage form:	Oral gavage and only once for 3 h with 2 mg/kg tunicamycin (dissolved in 50% PEG 400 aqueous solution).
	Applications:	In the small intestine of wild-type mice, expression levels of 1291 probes were elevated or of 1370 probes were suppressed >2 fold by tunicamycin. In the small intestine of Nrf2(-/-) mice, tunicamycin inhibited 2024 probes and induced 3471 probes by >2 fold. Compared with results of small intestine samples, in wild-type mice liver, less well-defined genes were either suppressed (943) or elevated (750) >2 fold by tunicamycin; whereas in Nrf2(-/-) mice liver, 3170 genes were inhibited or 39 well-defined genes were induced.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

## Product Citations

1. Jia B, Wang Y, et al. "Naringenin ameliorates insulin resistance by modulating endoplasmic reticulum stress in hepatitis C virus-infected liver." Biomed Pharmacother. 2019 Jul;115:108848.PMID:31039496
2. Chou CK, Liu W, et al. "Ethyl Acetate Extract of Scindapsus cf. hederaceus Exerts the Inhibitory Bioactivity on Human Non-Small Cell Lung Cancer Cells through Modulating ER Stress." Int J Mol Sci. 2018 Jun 21;19(7). pii: E1832.PMID:29933620

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

## References

- [1] Song-YiKim, Ji-SunHwang and Inn-OcHan. Tunicamycin inhibits Toll-like receptor-activated inflammation in RAW264.7 cells by suppression of NF-κB and c-Jun activity via a mechanism that is independent of ER-stress and N-glycosylation. European Journal of Pharmacology, 2013, 721: 294-300.
- [2] Sujit Nair, Changjiang Xu, Guoxiang Shen, et al. Toxicogenomics of Endoplasmic Reticulum stress inducer Tunicamycin in the Small Intestine and Liver of Nrf2 Knockout and C57BL/6J Mice. Toxicol Lett., 2007, 168(1):21-39.

## Caution

**FOR RESEARCH PURPOSES ONLY.**

**NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

**APExBIO Technology**

**[www.apexbt.com](http://www.apexbt.com)**

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: [info@apexbt.com](mailto:info@apexbt.com)

