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## DATASHEET

Tunicamycin

### Product overview

<b>Name</b>	Tunicamycin
<b>Cat No</b>	HB0880
<b>Alternative names</b>	TUN, TM
<b>Biological action</b>	Inhibitor
<b>Purity</b>	>98%
<b>Description</b>	ER Stress inducer which induces cell death

### Images



### Biological Data

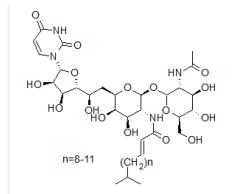
<b>Biological description</b>	<p>Tunicamycin is an antibiotic which is commonly used to induce ER (endoplasmic reticulum) stress and activate the unfolded protein response (UPR) to induce cell death.</p> <p>Tunicamycin inhibits the DPAGT1 enzyme to inhibit one of the first steps of glycoprotein biosynthesis in the ER which results in the accumulation of misfolded proteins to cause subsequent ER stress.</p> <p>ER stress can often be induced by treating cells with tunicamycin at 2.5-5 µg/ml of tunicamycin for 5 hours.</p>
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### Solubility & Handling

<b>Storage instructions</b>	+4 °C
<b>Solubility overview</b>	Soluble in DMSO (50mM)
<b>Important</b>	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

### Chemical Data

<b>Chemical name</b>	Tunicamycin from <i>Streptomyces</i> sp.
<b>Molecular Weight</b>	844.95
<b>Chemical structure</b>	<input type="text"/>



<b>Molecular Formula</b>	C <sub>39</sub> H <sub>64</sub> N <sub>4</sub> O <sub>16</sub> (tunicamycin C, n=10)
<b>CAS Number</b>	11089-65-9
<b>PubChem identifier</b>	90488851
<b>SMILES</b>	<chem>O=C(C=C3)NC(N3[C@@H]2O[C@@H]([C@@H](O)[C@H]2O)[C@H](O)C[C@@H]1[C@H](O)[C@@H](O)[C@@H](NC(/C=C/CCCCCCCCC(C)C)=O)[C@H](OC4O[C@H](CO)[C@@H](O)[C@H](O)[C@H]4NC(C)=O)O1)=O</chem>
<b>Source</b>	Streptomyces sp
<b>InChiKey</b>	ZOCXUHHJGZXXIGQ-SQXRCPDGSA-N
<b>MDL number</b>	MFCD00065709
<b>Appearance</b>	Off-white solid

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## References

### Dipeptidyl peptidase-IV inhibitor (gemigliptin) inhibits tunicamycin-induced endoplasmic reticulum stress, apoptosis and inflammation in H9c2 cardiomyocytes.

Hwang HJ *et al* (2014) Mol Cell Endocrinol 392(1-2)

**PubMedID** [24813659](#)

### Differential effects of endoplasmic reticulum stress-induced autophagy on cell survival.

Ding WX *et al* (2007) J Biol Chem 282(7)

**PubMedID** [17135238](#)

### Tunicamycin potentiates CDDP anticancer efficacy through the DPAGT1/Akt/ABCG2 pathway in mouse Xenograft models of human hepatocellular carcinoma.

Hou H *et al* (2013) Mol Cancer Ther 12(12)

**PubMedID** [24130050](#)

### Tunicamycin induced endoplasmic reticulum stress promotes apoptosis of prostate cancer cells by activating mTORC1.

Guha *et al* (2017) Oncotarget 8(40)

**PubMedID** [28978108](#)

### A novel endoplasmic reticulum stress-induced apoptosis model using tunicamycin in primary cultured neonatal rat cardiomyocytes.

Shen *et al* (2015) Mol Med Rep 12(4)

**PubMedID** [26151415](#)

### SEC24A identified as an essential mediator of thapsigargin-induced cell death in a genome-wide CRISPR/Cas9 screen.

Chidawanyika *et al* (2018) Cell Death Dis doi: 10.1038/s41420-018-0135-5

**PubMedID** [30588337](#)

### Measuring ER stress and the unfolded protein response using mammalian tissue culture system.

Osowski and Urano (2011) Methods Enzymol 490

**PubMedID** [21266244](#)