Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@m2stage.hellobio.com

DATASHEET

Tunicamycin

Product overview

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

Images

Biological Data

Biological description

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.

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.

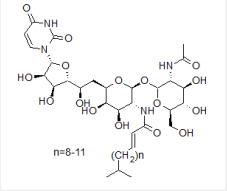
ER stress can often be induced by treating cells with tunicamycin at 2.5-5 µg/ml of tunicamycin for 5 hours.

Solubility & Handling

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

Chemical Data

Chemical name	Tunicamycin from *Streptomyces* sp.
Molecular Weight	844.95
Chemical structure	



Molecular Formula	$C_{39}H_{64}N_4O_{16}$ (tunicamycin C, n=10)
CAS Number	11089-65-9
PubChem identifier	90488851
SMILES	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/CCCCCCCCCCC(C)C)=O)[C@H](OC4O[C@H](CO)[C@@H](O)[C@H](O)[C@H]4NC(C)=O)O1)=O
Source	Streptomyces sp
InChiKey	ZOCXUHJGZXXIGQ-SQXRCPDGSA-N
MDL number	MFCD00065709
Appearance	Off-white solid

References

Dipeptidyl petidase-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.

Oslowski and Urano (2011) Methods Enzymol 490
PubMedID 21266244