Small Molecules

Tunicamycin

Nucleoside antibiotic; Inhibits N-acetylglucosamine phosphotransferase

Catalog #100-0570	5 mg
100-0571	10 mg

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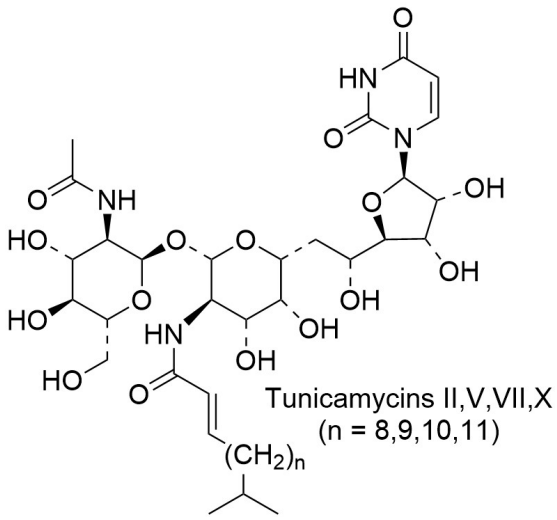
Product Description

Tunicamycin is a nucleoside antibiotic and an N-acetylglucosamine phosphotransferase inhibitor (Contessa et al.). It also inhibits protein palmitoylation (Patterson & Skene.). Tunicamycin can be used to induce the unfolded protein response and investigate the mechanism of autophagy (Ding et al.).

Molecular Name:	Tunicamycin
Alternative Names:	Not applicable
CAS Number:	11089-65-9
Chemical Formula:	$C_{39}H_{64}N_4O_{16}$ (Tunicamycin VII)
Molecular Weight:	845.0 g/mol
Purity:	≥ 95% (mixture of congeners)
Chemical Name:	Tunicamycins II,V,VII,X
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	• DMSO ≤ 20 mM

For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 118 µL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

CANCER RESEARCH
· Radiosensitizes human pancreatic cancer cells to chemotherapy (Contessa et al.).
· Induces endoplasmic reticulum stress and autophagy in cancer cells (Ding et al.).

References

Contessa JN et al. (2008) Inhibition of N-linked glycosylation disrupts receptor tyrosine kinase signaling in tumor cells. Cancer Res 68(10): 3803–9.

Ding W-X et al. (2007) Differential effects of endoplasmic reticulum stress-induced autophagy on cell survival. J Biol Chem 282(7): 4702–10.

Patterson SI & Skene JH. (1994) Novel inhibitory action of tunicamycin homologues suggests a role for dynamic protein fatty acylation in growth cone-mediated neurite extension. J Cell Biol 124(4): 521–36.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).