

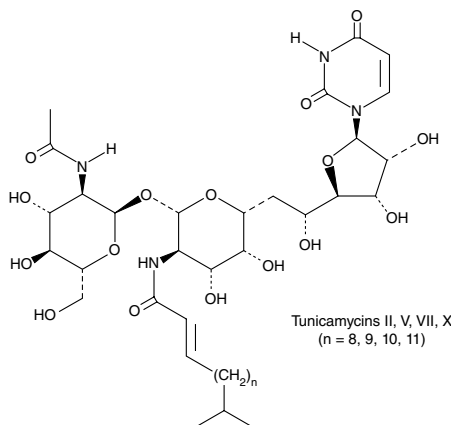
Product Information



Tunicamycin

Item No. 11445

CAS Registry No.: 11089-65-9
MF: C₃₉H₆₄N₄O₁₆ (for Tunicamycin VII)
FW: 844.4
Purity: ≥95% (mixture of isomers)
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 208, 260 nm



Laboratory Procedures

For long term storage, we suggest that tunicamycin be stored as supplied at -20°C. It should be stable for at least two years.

Tunicamycin is supplied as a crystalline solid. A stock solution may be made by dissolving the tunicamycin in the solvent of choice. Tunicamycin is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of tunicamycin in these solvents is approximately 20 mg/ml.

Tunicamycin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tunicamycin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Tunicamycin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

N-linked glycosylation is a highly regulated post-translational modification that is involved in protein folding and conformation, oligomerization, sorting, cell-cell interactions, and targeting of proteins to sub- or extra-cellular locations. It is initiated in the endoplasmic reticulum with the transfer of a carbohydrate moiety to an asparagine residue within a specific amino acid consensus sequence and then further processed in the Golgi whereupon a mature glycoprotein is exported through the secretory machinery to the plasma membrane. Tunicamycin, a nucleoside antibiotic, is a specific inhibitor of N-linked glycosylation that blocks the first step of glycoprotein synthesis thereby inducing protein unfolding. At 500 nM, it can impair the function of several receptor tyrosine kinases, including EGFR, ErbB2, ErbB3, and IGF-IR.¹ Also at 500 nM, it radiosensitizes U251 glioma and BXPC3 pancreatic adenocarcinoma cells to chemotherapy.¹ Tunicamycin impairs ALK phosphorylation and disrupts pro-survival signaling and cell viability in various neuroblastoma cell lines (IC₅₀s range from 20 - 500 nM).² Tunicamycin can also inhibit protein palmitoylation.³

References

1. Contessa, J.N., Bhojani, M.S., Freeze, H.H., *et al.* Inhibition of N-linked glycosylation disrupts receptor tyrosine kinase signaling in tumor cells. *Cancer Res.* **68**, 3803-3809 (2008).
2. Del Grosso, F., De Mariano, M., Passoni, L., *et al.* Inhibition of N-linked glycosylation impairs ALK phosphorylation and disrupts pro-survival signaling in neuroblastoma cell lines. *BMC Cancer* **11**, 1-10 (2011).
3. Resh, M.D. Use of analogs and inhibitors to study the functional significance of protein palmitoylation. *Methods* **40(2)**, 191-197 (2006).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/11445

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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