

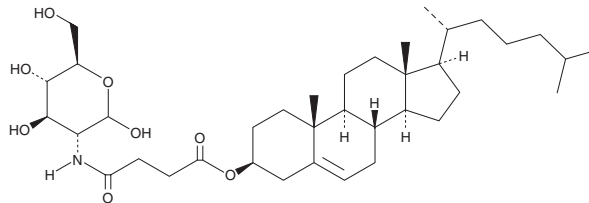
# PRODUCT INFORMATION



## Glucosamine Cholesterol

Item No. 39446

**CAS Registry No.:** 1257309-90-2  
**Formal Name:** 2-[[4-[(3 $\beta$ )-cholest-5-en-3-yloxy]-1,4-dioxobutyl]amino]-2-deoxy-D-glucopyranose  
**MF:** C<sub>37</sub>H<sub>61</sub>NO<sub>8</sub>  
**FW:** 647.9  
**Purity:**  $\geq 95\%$   
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:**  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Glucosamine cholesterol is supplied as a solid. A stock solution may be made by dissolving the glucosamine cholesterol in the solvent of choice, which should be purged with an inert gas. Glucosamine cholesterol is soluble in DMSO (sonicated).

### Description

Glucosamine cholesterol is a glucosamine-based lipid conjugate that has been used in the formation of lipid nanoparticles (LNPs).<sup>1</sup> It forms a stable, ordered bilayer with the glucosamine moiety facing outward to facilitate recognition by glucose transporter 1 (GLUT1) on cells. LNPs containing glucosamine cholesterol and encapsulating ceramide induce apoptosis in hypoxic human A549 lung carcinoma cells and A549-derived side population cells, also known as cancer stem cells (CSCs), but not hypoxic mouse L-929 fibroblasts. LNPs containing glucosamine cholesterol and encapsulating paclitaxel (Item No. 10461) and carboplatin (Item No. 13112) reduce tumor volume and increase the number of tumor-associated cytotoxic T cells in an LL/2 murine lung carcinoma model.

### Reference

1. Yu, L.-Y., Shueng, P.-W., Chiu, H.-C., *et al.* Glucose transporter 1-mediated transcytosis of glucosamine-labeled liposomal ceramide targets hypoxia niches and cancer stem cells to enhance therapeutic efficacy. *ACS Nano* **17**(14), 13158-13175 (2023).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
[WWW.CAYMANCHEM.COM](http://WWW.CAYMANCHEM.COM)