

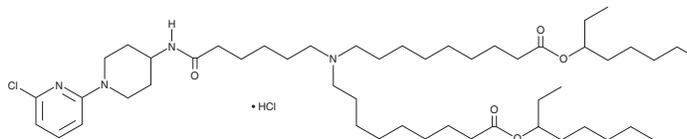
# PRODUCT INFORMATION



## Lipid S4 (hydrochloride)

Item No. 44984

**Formal Name:** di(octan-3-yl) 9,9'-((6-((1-(6-chloropyridin-2-yl)piperidin-4-yl)amino)-6-oxohexyl)azanediyl)dinonanoate, monohydrochloride  
**MF:** C<sub>50</sub>H<sub>89</sub>ClN<sub>4</sub>O<sub>5</sub> • HCl  
**FW:** 898.2  
**Purity:** ≥90%  
**Supplied as:** A 10 mg/ml solution in ethanol  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Description

Lipid S4 is an ionizable cationic lipid that has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA *in vitro* and *in vivo*.<sup>1</sup> It contains SR-527227 (Item No. 35499), a ligand for the serotonin (5-HT) receptor subtype 5-HT<sub>3</sub>, allowing lipid S4-based LNPs to be targeted to the brain. Lipid S4 LNPs containing lipid S4 and encapsulating mRNA encoding GFP accumulate primarily in neurons, astrocytes, microglia, and brain capillary endothelial cells (BCECs) in mice. Lipid S4-containing LNPs encapsulating mRNA encoding a modified form of IL-12, which contains transcripts for IL-12 and a portion of the IL-12 receptor *via* a matrix metalloproteinase (MMP) linker, reduce tumor growth and increase survival in an orthotopic mouse model of glioblastoma.

### Reference

1. Cao, D., Hou, X., Wang, C., *et al.* Lipid nanoparticles for mRNA delivery in brain via systemic administration. *Sci. Adv.* **11(33)**, eadw0730 (2025).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 02/27/2026

#### 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