

Product Data Sheet

Product Name: 6,6'-Trehalose Dioleate

Cat. No.: GC92071

Chemical Properties

Cas. No. 338733-40-7

Chemical Name (9Z)-9-octadecenoate, 6-O-[(9Z)-1-oxo-9-octadecen-1-yl]-α-D-glucopyranosyl, α-D-glucopyranoside

SMILES O[C@H]([C@H]1O)[C@H](O[C@@H]([C@H]1O)COC(CCCCCC/C=C\CCCCCCCC)=O)O[C@@H]2[C@H](O)[C@@H](O)[C@H](O)[C@@H](COC(CCCCCC/C=C\CCCCCCCC)=O)O2

Formula C₄₈H₈₆O₁₃

M.Wt 871.2

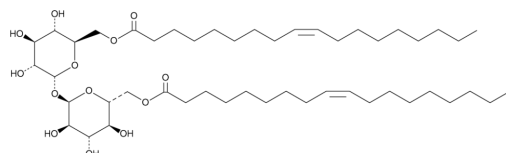
Solubility Chloroform: Slightly Soluble: 0.1-1 mg/ml, Methanol: Slightly Soluble: 0.1-1 mg/ml

Storage -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

6,6'-Trehalose dioleate (6,6'-TDO) is a glycolipid that has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA *in vitro* and *in vivo*.¹ LNPs containing 6,6'-TDO and encapsulating mRNA encoding influenza A hemagglutinin A (HA) increase Ifn-γ, Il-2, and Tnf-α secretion by isolated mouse splenocytes. LNPs containing 6,6'-TDO accumulate in the liver and spleen after intramuscular administration in mice. Unlike LNP formulations that do not contain 6,6'-TDO, LNPs containing 6,6'-TDO do not decrease serum levels of blood urea nitrogen (BUN) or increase serum levels of lactate dehydrogenase (LDH), troponin I, alanine transaminase (ALT), and

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aspartate aminotransferase (AST) in mice. LNPs containing 6,6'-TDO and encapsulating mRNA encoding influenza A HA increase serum IgG1 and IgG2a titers in mice.

References:

[1]. Bae, S.-H., Yoo, S., Lee, J., et al. A lipid nanoparticle platform incorporating trehalose glycolipid for exceptional mRNA vaccine safety. *Bioact. Mater.* 38486-498 (2024).

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