

PRODUCT INFORMATION

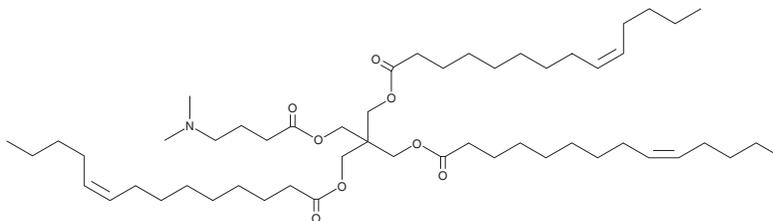


TCL053

Item No. 37045

CAS Registry No.: 2361162-70-9
Formal Name: 2-(((4-(dimethylamino)butanoyl)oxy)methyl)-2-((((Z)-tetradec-9-enyl)oxy)methyl)propane-1,3-diyl (9Z,9'Z)-bis(tetradec-9-enoate)

MF: C₅₃H₉₅NO₈
FW: 874.3
Purity: ≥95%
Supplied as: A 50 mg/ml solution in methyl acetate
Storage: -20°C
Stability: ≥1 year



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

Laboratory Procedures

TCL053 is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice, which should be purged with an inert gas. TCL053 is soluble in the organic solvent ethanol at a concentration of approximately 25 mg/ml.

Description

TCL053 is an ionizable cationic lipid ($pK_a = 6.8$) that has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA and single-guide RNA (sgRNA) *in vitro* and *in vivo*.¹ LNPs containing TCL053 and encapsulating sgRNA targeting the donor site of dystrophin exon 45, in combination with TCL053-containing LNPs encapsulating sgRNA targeting the splicing acceptor site of dystrophin exon 45, restore dystrophin expression in myoblasts differentiated from induced-pluripotent stem (iPS) cells isolated from patients with Duchenne muscular dystrophy (DMD). LNPs containing TCL053 and encapsulating mRNA encoding the Cas9 nuclease, in combination with LNPs containing TCL053 and encapsulating single-guide RNA targeting the Rosa26 locus, have been used to induce CRISPR-mediated gene editing in the mouse gastrocnemius muscle.

Reference

1. Kenjo, E., Hozumi, H., Makita, Y., *et al.* Low immunogenicity of LNP allows repeated administrations of CRISPR-Cas9 mRNA into skeletal muscle in mice. *Nat. Commun.* **12**(1), 7101 (2021).

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, 10/20/2025

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