

# Ionizable Cationic Lipids: From R&D to API



Ionizable cationic lipids are a key component in the formulation of lipid nanoparticles (LNPs). Ionizable cationic lipids encapsulate nucleic acid payloads and promote endosomal escape with minimal cytotoxicity. Given the significant structural and functional diversity of these lipids, ionizable cationic lipids have utility in several LNP applications, from achieving tissue tropism for targeted delivery to personalized cell and gene therapy.

## A Single Partner Across the LNP Development Pipeline

Cayman's ionizable cationic lipids support LNP development programs from early discovery, through all clinical phases, to commercial supply of active pharmaceutical ingredient (API) lipids to your CGMP LNP formulator of choice. We offer a collaborative, flexible approach, allowing our clients to build a customized service plan to suit their individual project needs.



## Our Portfolio

Backed by over 40 years of experience in lipid synthesis and analysis, Cayman helps our clients reach important milestones in their LNP R&D journey with stand-alone services or a comprehensive LNP development program.

<b>Research Grade Lipids</b>	<b>Custom Lipid Synthesis</b>	<b>CGMP Lipid Manufacturing</b>	<b>LNP Resource Center</b>
Access our industry-leading collection of more than 140 ready-to-use ionizable cationic lipids	Custom design and synthesis of novel lipids to advance your proprietary intellectual property	Scale-up and CGMP lipid manufacturing to support LNP formulation by your CDMO of choice	Our full collection of products, services, and resources for LNP R&D. <a href="http://www.caymanchem.com/LNPs">www.caymanchem.com/LNPs</a>



### Licensable Lipids with Freedom to Operate for LNP Formulations

[www.caymanchem.com/certest](http://www.caymanchem.com/certest)

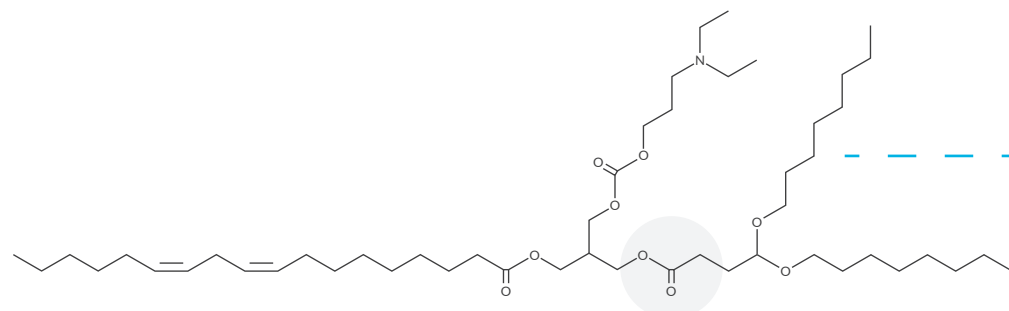
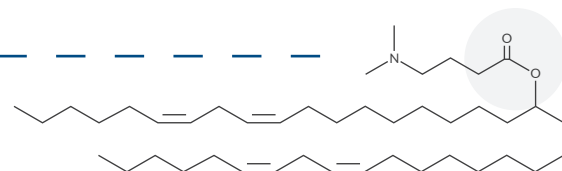
# FEATURED IONIZABLE CATIONIC LIPIDS

The following selection showcases the latest and most advanced ionizable cationic lipids available in Cayman's comprehensive portfolio of lipids for LNP formulation.



**DLin-MC3-DMA**

Item No. 34364

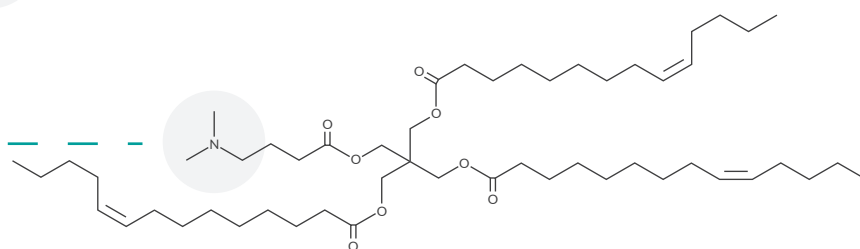


**LP-01**

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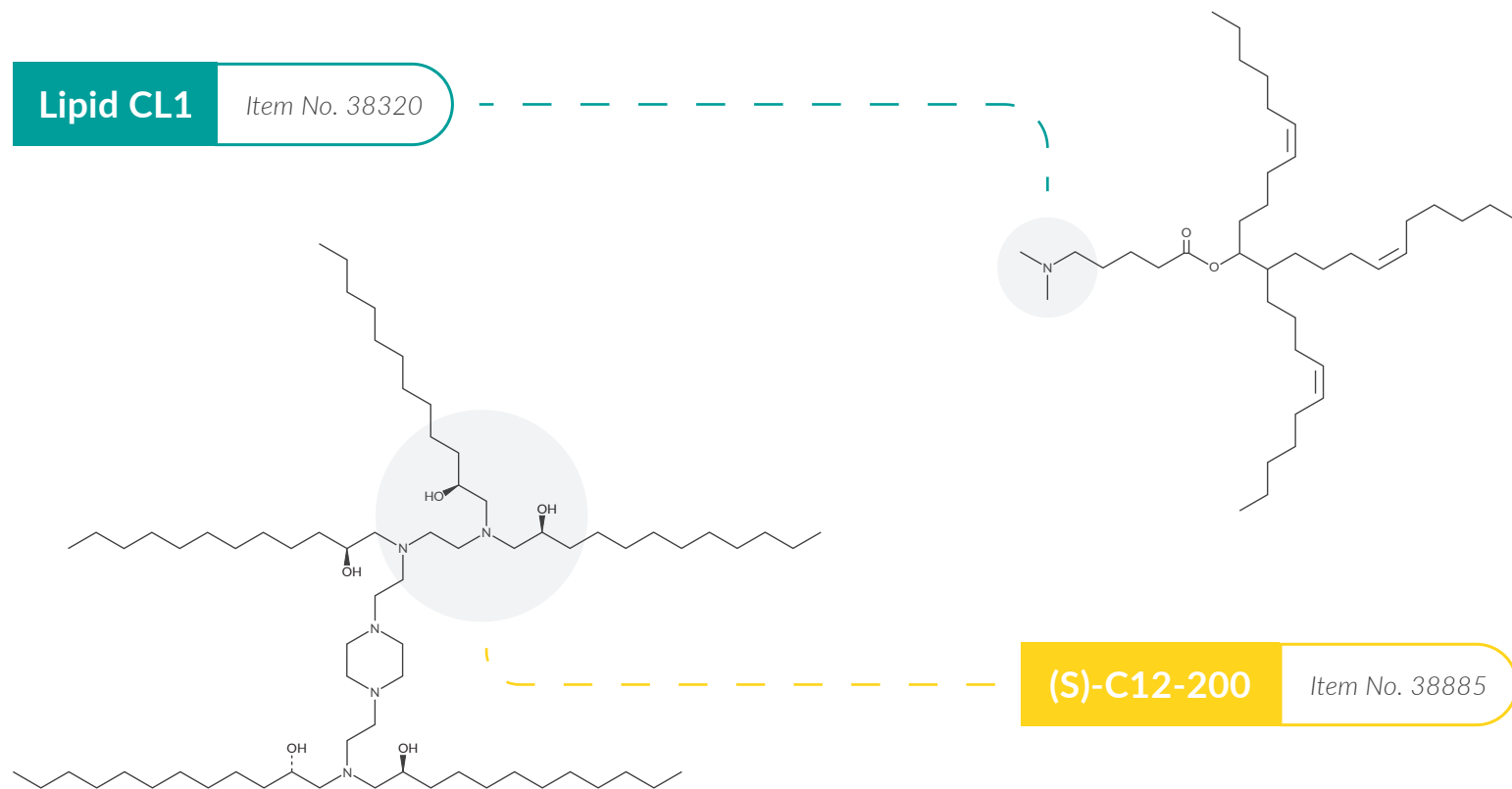
**TCL053**

Item No. 37045



**Lipid CL1**

Item No. 38320

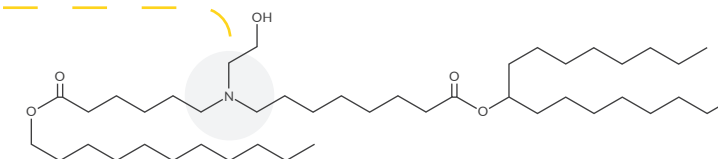


**(S)-C12-200**

Item No. 38885

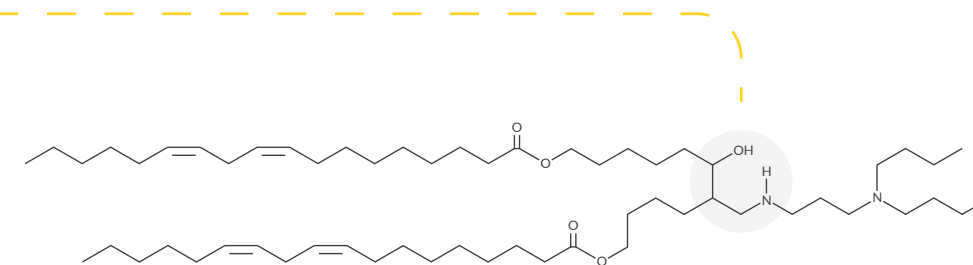
**SM-102**

Item No. 33474



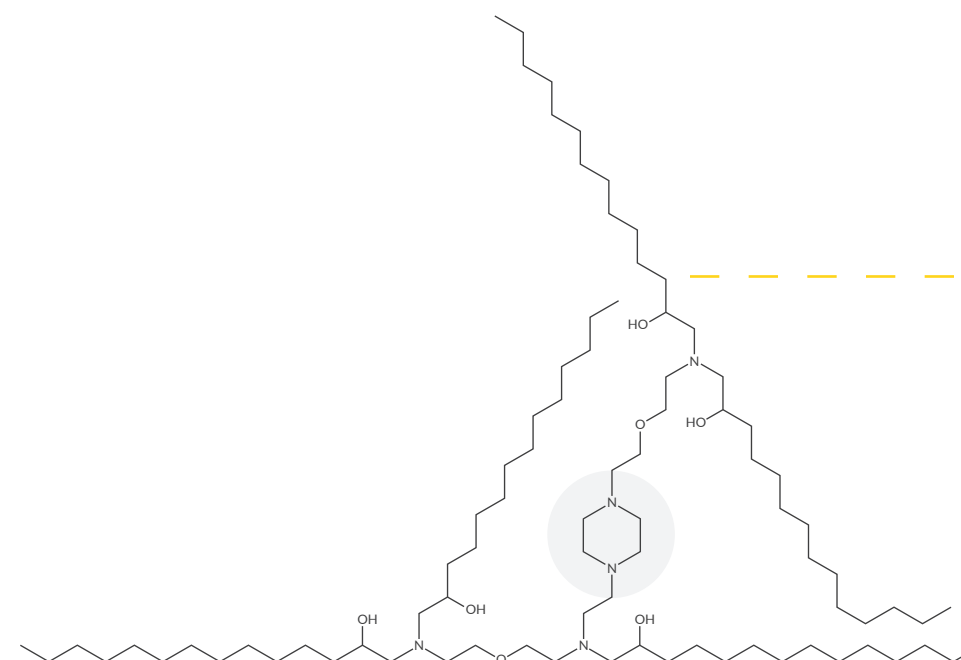
**IR-117-17**

Item No. 40420



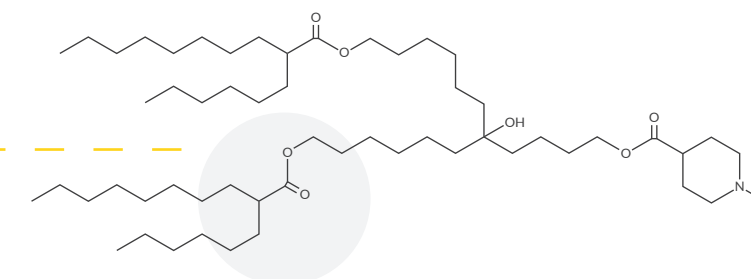
**C14-4**

Item No. 38942



**CL15F6**

Item No. 40345



Unsaturated



Unsaturated, Branched Tail, Multi-Tail Non-Disulfide

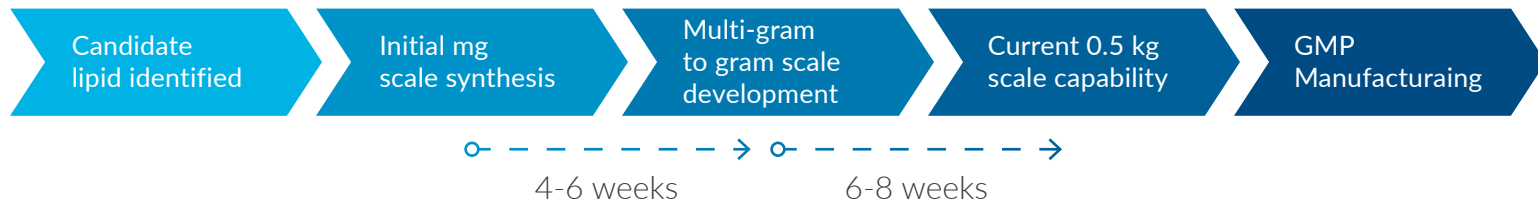


Unsaturated, Multi-Tail Non-Disulfide Lipids



Branched Tail, Multi-Tail Non-Disulfide Lipids

# Lipid Synthesis & CGMP Manufacturing



## Custom Lipid Synthesis

Partner with Cayman to design and synthesize custom ionizable cationic lipids to accelerate your path to market while maintaining a competitive edge through proprietary intellectual property.

## Scale Up & Bulk Quantities

Bulk quantities of custom lipids or ionizable cationic lipids in our catalog are also available to support your LNP R&D efforts.

Get More Information or Request a Quote at [www.caymanchem.com/custom-synthesis](http://www.caymanchem.com/custom-synthesis)

## CGMP Lipid Manufacturing

- Process Development
- Analytical Method Development & Validation
- Technology Transfer & Process Scale-Up
- CGMP Manufacturing
- Commercial Scale-Up & Process Validation

## Fit-for-Purpose CGMP Deliverables

- Starting Materials
- Excipients
- Ancillary Grade
- Phase-appropriate APIs



### OUR CAPABILITIES

Our CGMP Services Division leverages the expertise of Cayman's synthetic chemists, medicinal chemists, process chemists, and chemical engineers who offer decades of experience and extensive knowledge.

- Ionizable cationic lipids
- Helper lipids
- Sterol lipids
- Custom & proprietary lipids



### OUR FACILITIES

Cayman operates 10,972 ft<sup>2</sup> of FDA-inspected, dedicated CGMP manufacturing suites to support kilogram to multi-kilogram synthesis at our headquarters in Ann Arbor, Michigan, USA.

View all CGMP Services at [www.caymanchem.com/CGMP-services](http://www.caymanchem.com/CGMP-services)