

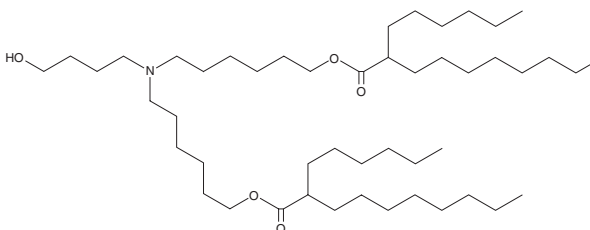
PRODUCT INFORMATION



ALC-0315

Item No. 34337

CAS Registry No.: 2036272-55-4
Formal Name: 2-hexyl-decanoic acid, 1,1'-[[[4-hydroxybutyl]imino]di-6,1-hexanediy] ester
MF: C₄₈H₉₅NO₅
FW: 766.3
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

ALC-0315 is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as chloroform purged with an inert gas can be used. The solubility of ALC-0315 in chloroform is approximately 50 mg/ml.

Description

ALC-0315 is an ionizable cationic lipid (pK_a 6.09) that has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA, siRNA, and plasmid DNA *in vitro* and *in vivo*.¹⁻⁴ LNPs containing ALC-0315 and encapsulating siRNA targeting Factor VII mRNA decrease Factor VII mRNA levels in hepatocytes in mice.³ Administration of severe acute respiratory coronavirus 2 (SARS-CoV-2) mRNA in ALC-0315-containing LNPs induces the production of IgG that binds to the SARS-CoV-2 receptor-binding domain (RBD) in rhesus macaques, with a boost in antigen-specific IgG geometric mean titers (GMT) seven and 14 days after a second dose. LNPs containing ALC-0315 and encapsulating ovalbumin mRNA reduce tumor volume in an ovalbumin-expressing B16/F10 murine melanoma model.⁵ Formulations containing ALC-0315 have been used in the development of LNPs for the delivery of mRNA-based vaccines.

References

1. Ansell, S.M. and Du, X. Lipids and lipid nanoparticle formulations for delivery of nucleic acids. *Acuitas Therapeutics, Inc.* **US 10,166,298 B2**, (2019).
2. Vogel, A.B., Kanevsky, I., Che, Y., *et al.* BNT162b vaccines protect rhesus macaques from SARS-CoV-2. *Nature* **592(7853)**, 283-289 (2021).
3. Ferraresso, F., Strilchuk, A.W., Juang, L.J., *et al.* Comparison of DLin-MC3-DMA and ALC-0315 for siRNA delivery to hepatocytes and hepatic stellate cells. *Mol. Pharm.* **19(7)**, 2175-2182 (2022).
4. Zhang, W., Pfeifle, A., Lansdell, C., *et al.* The expression kinetics and immunogenicity of lipid nanoparticles delivering plasmid DNA and mRNA in mice. *Vaccines (Basel)* **11(10)**, 1580 (2023).
5. Chen, J., Ye, Z., Huang, C., *et al.* Lipid nanoparticle-mediated lymph node-targeting delivery of mRNA cancer vaccine elicits robust CD8⁺ T cell response. *Proc. Natl. Acad. Sci. USA* **119(34)**, e2207841119 (2022).

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