

# PRODUCT INFORMATION



## DLin-MC3-DMA-d<sub>6</sub> Item No. 9004897

**Formal Name:** 4-(dimethyl-d<sub>3</sub>-amino)-butanoic acid,  
(10Z,13Z)-1-(9Z,12Z)-9,12-octadecadien-1-yl-  
10,13-nonadecadien-1-yl ester

**Synonyms:** Dilinoleyl-methyl-4-dimethylaminobutyrate-d<sub>6</sub>,  
MC3-d<sub>6</sub>

**MF:** C<sub>43</sub>H<sub>73</sub>D<sub>6</sub>NO<sub>2</sub>

**FW:** 648.1

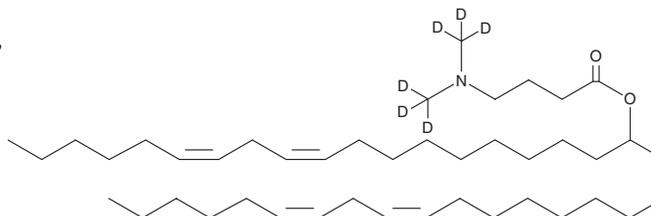
**Chemical Purity:** ≥95% (DLin-MC3-DMA)

**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>6</sub>); ≤1% d<sub>0</sub>

**Supplied as:** A 5 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

DLin-MC3-DMA-d<sub>6</sub> is intended for use as an internal standard for the quantification of DLin-MC3-DMA (Item No. 34364) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

DLin-MC3-DMA is an ionizable cationic lipid (apparent pK<sub>a</sub> = 6.44) that has been used in the generation of lipid nanoparticles (LNPs) encapsulating siRNA, mRNA, or plasmid DNA for use *in vitro* and *in vivo*.<sup>1-3</sup> LNPs containing DLin-MC3-DMA accumulate in the muscle and non-draining lymph nodes after intramuscular administration and in the spleen after intravenous administration in mice.<sup>3</sup> DLin-MC3-DMA-containing LNPs encapsulating siRNA targeting *F7*, the gene encoding Factor VII, reduce hepatic and plasma Factor VII levels in mice without increasing serum levels of alanine transaminase (ALT), aspartate aminotransferase (AST), or bile acids, which are all markers of liver toxicity.<sup>4</sup> Formulations containing DLin-MC3-DMA have been used in LNPs encapsulating transthyretin-directed siRNA for the treatment of hereditary transthyretin-mediated amyloidosis-induced polyneuropathy.

### References

1. Jayaraman, M., Ansell, S.M., Mui, B.L., *et al.* Maximizing the potency of siRNA lipid nanoparticles for hepatic gene silencing *in vivo*. *Angew. Chem. Int. Ed. Engl.* **51(34)**, 8529-8533 (2012).
2. Li, Z., Yang, Z., Lapidus, R.G., *et al.* IKK phosphorylation of NF-κB at serine 536 contributes to acquired cisplatin resistance in head and neck squamous cell cancer. *Am. J. Cancer Res.* **5(10)**, 3098-3110 (2015).
3. Algarni, A., Pilkington, E.H., Suys, E.J.A., *et al.* *In vivo* delivery of plasmid DNA by lipid nanoparticles: The influence of ionizable cationic lipids on organ-selective gene expression. *Biomater. Sci.* **10(11)**, 2940-2952 (2022).
4. 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).

#### 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.

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