

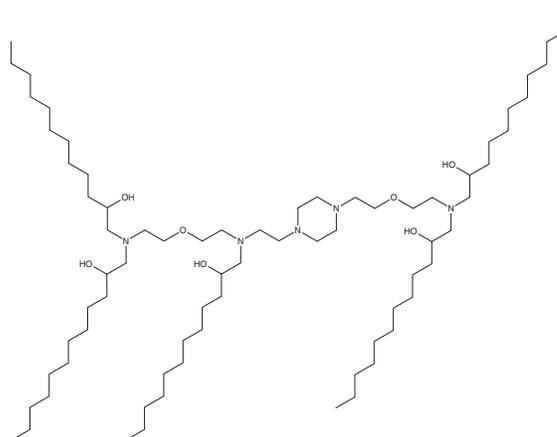
# PRODUCT INFORMATION



## Lipid A4

Item No. 38351

**CAS Registry No.:** 2639634-71-0  
**Formal Name:** 1,1'-((2-(2-(4-(2-((2-(2-(bis(2-hydroxydodecyl)amino)ethoxy)ethyl)(2-hydroxydodecyl)amino)ethyl)piperazin-1-yl)ethoxy)ethyl)azanediyl)bis(dodecan-2-ol)  
**Synonyms:** C12-4, C12-494  
**MF:** C<sub>74</sub>H<sub>153</sub>N<sub>5</sub>O<sub>7</sub>  
**FW:** 1,225.0  
**Purity:** ≥95%  
**Supplied as:** A 10 mg/ml solution in ethanol  
**Storage:** -20°C  
**Stability:** ≥1 year



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

### Description

Lipid A4 is a branched-chain ionizable cationic lipidoid that has been used in the formation of lipid nanoparticles (LNPs) for the delivery of mRNA.<sup>1</sup> LNPs containing lipid A4 and encapsulating an mRNA reporter accumulate in the uterus, placenta, and ovaries, as well as to the spleen and liver, in pregnant mouse dams unlike LNPs containing the branched-chain ionizable cationic lipidoid C12-200 (Item No. 36699), which primarily accumulate in the liver. Intravenous administration of LNPs containing lipid A4 and encapsulating mRNA encoding VEGF increase placental VEGFR1 levels and mean fetal blood vessel area without inducing liver damage in pregnant mouse dams. LNPs containing lipid A4 and encapsulating mRNA encoding a chemiluminescent reporter cross the blood-brain barrier and induce reporter expression in the brains of mice.<sup>2</sup>

### References

- Swingle, K.L., Safford, H.C., Geisler, H.C., *et al.* Ionizable lipid nanoparticles for *in vivo* mRNA delivery to the placenta during pregnancy. *J. Am. Chem. Soc.* **145**(8), 4691-4706 (2023).
- Han, E.L., Padilla, M.S., Palanki, R., *et al.* Predictive high-throughput platform for dual screening of mRNA lipid nanoparticle Blood-brain barrier transfection and crossing. *Nano Lett.* (2024).

#### 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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