

DC49908 | OF-02

Instructions for Use

OF-02 (OF-2) is an alkenyl amino alcohol (AAA) ionizable lipid for highly potent in vivo mRNA delivery. Alkenyl amino alcohols (AAA) are a functional group found in sphingosine and other bioactive molecules. It was used to prepare AAA-based ionizable lipids through ring-opening reactions between alkenyl epoxides (AEs) and polyamine cores. These AAA-based iLNPs could promote high-level protein expression. Therefore, AAA-based ionizable lipids OF-00, OF-01, OF-02, and OF-03 were prepared. The results of in vivo delivery of human erythropoietin (hEPO) mRNA showed that the AAA ionizable lipid OF-02 with the linoleic acid derivative could effectively deliver hEPO mRNA. Compared with the positive control CKK-E12, OF-02 showed an increased ability to induce serum EPO protein expression by nearly twofold (Figure 7b). Likewise, it outperformed two benchmark ionizable lipids (503013 and C12-200) in the nucleic acid delivery field. Furthermore, the mRNA delivered by OF-02 iLNPs was mainly in vivo translated into the liver. The liver-targeting ability of OF-02 iLNPs improves their delivery efficiency. Therefore, the OF-02 iLNPs may become excellent delivery vehicles for the treatment of liver diseases without other side effects of damage to other organs during the treatment.

Product information

CAS No.	Not available
Chemical Name	OF-02
Formula	C ₈₄ H ₁₅₂ N ₄ O ₆
M.Wt	1,314.13
Purity	>95%
Storage	Original product: up to 1 year under the storage conditions stated on the vial, kept tightly sealed. Stock solutions: aliquots at -20°C, generally up to one month.
Shipping condition	Ships from Shanghai. Pure lipid is stable during ice-pack transport.

Formulation & study context

Literature values apply to the cited study only. Administration routes describe research, not clinical instructions.

A complete product-specific formulation has not been verified. No standard ratio is substituted.

N/P ratio	Not reported in the verified record
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Cargo	Not available in the verified record
Administration route	Not available in the verified record
Animal model	Not available in the verified record
Formulation process	Not available in the verified record

N/P is a nitrogen-to-phosphate molar ratio. Lipid:cargo mass ratio is a different quantity and must not be used as N/P.

Stock-solution preparation table

Calculated using product-page MW: 1314.13 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	7.610 mL	1.522 mL	0.761 mL
25 mg	19.024 mL	3.805 mL	1.902 mL
50 mg	38.048 mL	7.610 mL	3.805 mL
100 mg	76.096 mL	15.219 mL	7.610 mL
250 mg	190.240 mL	38.048 mL	19.024 mL

Volume (mL) = mass (mg) × 1000 / [MW (g/mol) × concentration (mM)]. Mathematical conversions only; not measured solubility. Confirm solvent compatibility and the exact material before preparation.

Handling & storage

Provided that storage conditions are as stated on the product vial and the vial is kept tightly sealed, the product can be stored for up to 1 year.

Wherever possible, prepare and use solutions on the same day. If stock solutions must be prepared in advance, store them as aliquots in tightly sealed vials at -20°C. Generally, these will be usable for up to one month.

Before use, and prior to opening the vial, allow the product to equilibrate to room temperature for at least 1 hour.

References

[1]. Fenton OS, Kauffman KJ, McClellan RL, et al. Bioinspired Alkenyl Amino Alcohol Ionizable Lipid Materials for Highly Potent In Vivo mRNA Delivery. Adv Mater. 2016;28(15):2939-2943.