

# DC67449 | Lipid TG4C

## Instructions for Use

TG4C is an ionizable cationic lipid (pKa 6.71) optimized for mRNA delivery via lipid nanoparticles (LNPs). When formulated into LNPs carrying human EPO mRNA, it significantly elevates serum EPO levels in mice. Furthermore, aerosolized TG4C-based LNPs containing HGF mRNA demonstrate therapeutic potential in pulmonary emphysema models, showing reduced inflammatory cytokines (IL-1 $\beta$ , IL-6, TNF- $\alpha$ ) in bronchoalveolar lavage fluid after elastase-induced lung injury.

## Product information

|                    |                                                                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAS No.            | Not available                                                                                                                                                       |
| Chemical Name      | Lipid TG4C                                                                                                                                                          |
| Formula            | C55H103NO10                                                                                                                                                         |
| M.Wt               | 938.4                                                                                                                                                               |
| Purity             | ELSD-HPLC>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  |
| 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: 938.4 g/mol. Volumes are final solution volumes.

| Mass  | 1 mM      | 5 mM     | 10 mM    |
|-------|-----------|----------|----------|
| 10 mg | 10.656 mL | 2.131 mL | 1.066 mL |

| Mass   | 1 mM       | 5 mM      | 10 mM     |
|--------|------------|-----------|-----------|
| 25 mg  | 26.641 mL  | 5.328 mL  | 2.664 mL  |
| 50 mg  | 53.282 mL  | 10.656 mL | 5.328 mL  |
| 100 mg | 106.564 mL | 21.313 mL | 10.656 mL |
| 250 mg | 266.411 mL | 53.282 mL | 26.641 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

Not available