

# DC67566 | CureVac Lipid C24(CVL1,VitE-C4DE-Pip- S)

## Instructions for Use

CVL1 (C24), also known as VitE-C4DE-Pip-S, is a vitamin E-derived ionizable lipid developed for lipid nanoparticle-mediated delivery of mRNA and other nucleic acids developed by CureVac. It features two hydrophobic  $\alpha$ -tocopherol moieties connected to a bis-piperidine ionizable core through biodegradable succinate ester linkages, while a central thioether-containing spacer provides additional structural flexibility. CVL1 can be incorporated into LNP formulations to support nucleic acid encapsulation, cellular uptake, and intracellular delivery. CureVac has investigated CVL1-containing LNPs for mRNA expression in immune-related tissues and cells, including the spleen, lymph nodes, and antigen-presenting cells, making it a valuable research lipid for mRNA vaccines, cancer immunotherapy, and other nucleic acid delivery applications.

## Product information

|                    |                                                                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAS No.            | Not available                                                                                                                                                       |
| Chemical Name      | CureVac Lipid C24(CVL1,VitE-C4DE-Pip- S)                                                                                                                            |
| Formula            | C <sub>84</sub> H <sub>142</sub> O <sub>10</sub> Cl <sub>2</sub> N <sub>2</sub> S                                                                                   |
| M.Wt               | 1,443.02                                                                                                                                                            |
| Purity             | >98%                                                                                                                                                                |
| 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: 1443.02 g/mol. Volumes are final solution volumes.

| Mass   | 1 mM       | 5 mM      | 10 mM     |
|--------|------------|-----------|-----------|
| 10 mg  | 6.930 mL   | 1.386 mL  | 0.693 mL  |
| 25 mg  | 17.325 mL  | 3.465 mL  | 1.732 mL  |
| 50 mg  | 34.650 mL  | 6.930 mL  | 3.465 mL  |
| 100 mg | 69.299 mL  | 13.860 mL | 6.930 mL  |
| 250 mg | 173.248 mL | 34.650 mL | 17.325 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