

# DC67282 | Merck Lipid X (L608, Merck-32)

## Instructions for Use

L-608 is a novel ionizable amino lipid designed for formulating lipid nanoparticles (LNPs) to enable efficient subcutaneous (s.c.) delivery of mRNA therapeutics. Engineered to address inflammation associated with mRNA LNPs, L608 integrates seamlessly with steroid prodrugs, such as budesonide-C16 and budesonide-C18:1, to suppress local and systemic inflammatory responses while prolonging therapeutic protein expression. Preclinical studies demonstrate that L608 LNPs significantly reduce injection-site edema (>80% improvement) and lower systemic inflammatory markers (e.g., haptoglobin), while achieving 2–3× higher plasma AUC for proteins like hFGF21 compared to non-steroid LNPs.

## Product information

|                    |                                                                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAS No.            | Not available                                                                                                                                                       |
| Chemical Name      | Merck Lipid X (L608, Merck-32)                                                                                                                                      |
| Formula            | Not available                                                                                                                                                       |
| M.Wt               | Not available                                                                                                                                                       |
| 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: not available g/mol. Volumes are final solution volumes.

| Mass   | 1 mM           | 5 mM           | 10 mM          |
|--------|----------------|----------------|----------------|
| 10 mg  | MW unavailable | MW unavailable | MW unavailable |
| 25 mg  | MW unavailable | MW unavailable | MW unavailable |
| 50 mg  | MW unavailable | MW unavailable | MW unavailable |
| 100 mg | MW unavailable | MW unavailable | MW unavailable |
| 250 mg | MW unavailable | MW unavailable | MW unavailable |

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

Endosomal escape of delivered mRNA from endosomal recycling tubules visualized at the nanoscale-J Cell Biol. 2021 Dec 9;221(2):e202110137. doi