

SM-102

Catalog number: N-1102

Molecular Formula: C₄₄H₈₇NO₅

MW: 710.18

CAS#: 2089251-47-6

Alternative Names: Lipid H, Heptadecan-9-yl 8-((2-hydroxyethyl)(6-oxo-6-(undecyloxy)hexyl)amino)-octanoate

Solubility: >5mg/mL chloroform, ethanol

Storage and Handling: Store dry at -20°C, Stock solution should be stored frozen (-20°C or below).

Background: SM-102 is a cationic lipid used in lipid nanoparticles (LNPs). LNP compositions have proven effective as transport vehicles into cells and/or intracellular compartments for biologically active substances such as small molecule drugs, proteins, and nucleic acids.

References:

- 1) Sabnis S, Kumarasinghe ES, Salerno T, et al. (2018) A Novel Amino Lipid Series for mRNA Delivery: Improved Endosomal Escape and Sustained Pharmacology and Safety in Non-human Primates. *Mol Ther.* **26**(6):1509-1519. doi:10.1016/j.ymthe.2018.03.010.
- 2) Hassett KJ, Benenato KE, et al. (2019) Optimization of Lipid Nanoparticles for Intramuscular Administration of mRNA Vaccines. *Mol Ther Nucleic Acids.* **5**:1-11. doi: 10.1016/j.omtn.2019.01.013.
- 3) Chen, J., et al. (2023). "Combinatorial design of ionizable lipid nanoparticles for muscle-selective mRNA delivery with minimized off-target effects." *Proceedings of the National Academy of Sciences* **120**(50): e2309472120 doi:10.1073/pnas.2309472120.
- 4) Alsaiani, S. K., et al. (2024). "Zeolitic imidazolate frameworks activate endosomal Toll-like receptors and potentiate immunogenicity of SARS-CoV-2 spike protein trimer." *Science Advances* **10**(10): eadj6380 doi:10.1126/sciadv.adj6380.

Hazardous Properties and Cautions: The toxicological and pharmacological properties of this compound are not fully known. For further information see the MSDS on request. This product is manufactured and shipped only in small quantities, intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

Warranty and Disclaimer: Echelon warrants the product conforms to the specifications stated herein. In the event of nonconformity, Echelon will replace products or refund purchase price, at its sole option, and Echelon shall not be responsible for any other loss or damage, whether known or foreseeable to Echelon. No other warranties apply, express or implied, including but not limited to warranty of fitness for any purpose or implied warranty of merchantability. Purchaser is solely responsible for all consequences of its use of the product and Echelon assumes no responsibility therefore, including success of purchaser's research and development, or health or safety of any uses of the product.

Technical Data Sheet, Rev 2, 4/26/24– **For research use only.** Not intended for diagnostic or therapeutic use.

