

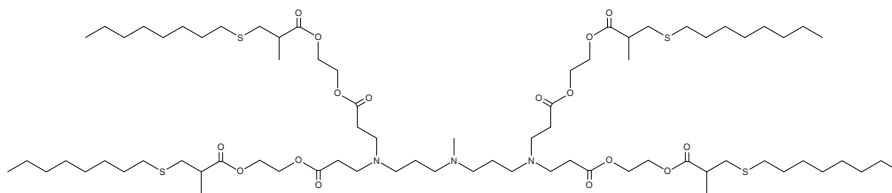
PRODUCT INFORMATION



4A3-SC8

Item No. 38155

CAS Registry No.: 1857340-78-3
MF: $C_{75}H_{139}N_3O_{16}S_4$
FW: 1,467.2
Purity: $\geq 95\%$
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥ 2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

4A3-SC8 is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. 4A3-SC8 is soluble in the organic solvent chloroform.

Description

4A3-SC8 is an ionizable cationic lipid ($pK_a = 6.66$) and a dendrimer that has been used in the generation of lipid nanoparticles (LNPs) for the delivery of siRNA, mRNA, single-guide RNA (sgRNA), ssDNA, and PEGylated BODIPY dyes.¹⁻⁴ LNPs containing 4A3-SC8 and encapsulating siRNA targeting Factor VII selectively accumulate in the liver and decrease hepatic Factor VII activity in mice.³ Intratumoral administration of LNPs containing 4A3-SC8 and encapsulating homologous double-strand repair (HDR) elements correct the DNA encoding GFP with a tyrosine-to-histidine mutation at position 66 (GFP^{Y66H}) in a HEK293 mouse xenograft model.³ Intravenous administration of LNPs containing 4A3-SC8 and encapsulating an mRNA reporter and a PEGylated BODIPY dye have been used for tumor imaging in mice.⁴

References

1. Zhou, K., Nguyen, L.H., Miller, J.B., *et al.* Modular degradable dendrimers enable small RNAs to extend survival in an aggressive liver cancer model. *Proc. Natl. Acad. Sci. USA* **113**(3), 520-525 (2016).
2. Álvarez-Benedicto, E., Farbiak, L., Ramírez, M.M., *et al.* Optimization of phospholipid chemistry for improved lipid nanoparticle (LNP) delivery of messenger RNA (mRNA). *Biomater. Sci.* **10**(2), 549-559 (2022).
3. Farbiak, L., Cheng, Q., Wei, T., *et al.* All-in-one dendrimer-based lipid nanoparticles enable precise HDR-mediated gene editing in vivo. *Adv. Mater.* **33**(30), e2006619 (2021).
4. Xiong, H., Liu, S., Wei, T., *et al.* Theranostic dendrimer-based lipid nanoparticles containing PEGylated BODIPY dyes for tumor imaging and systemic mRNA delivery in vivo. *J. Control. Release* **325**, 198-205 (2020).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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