

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
25 May 2023 (25.05.2023)



(10) International Publication Number
WO 2023/089522 A1

(51) International Patent Classification:

C07D 305/06 (2006.01) C12N 15/00 (2006.01)
C07D 305/14 (2006.01) A61K 31/337 (2006.01)
C07D 307/06 (2006.01) A61K 31/34 (2006.01)
C07D 309/04 (2006.01)

(21) International Application Number:

PCT/IB2022/061086

(22) International Filing Date:

17 November 2022 (17.11.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/264,263 18 November 2021 (18.11.2021) US
63/374,756 07 September 2022 (07.09.2022) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(54) Title: NOVEL LIPIDS FOR DELIVERY OF NUCLEIC ACID SEGMENTS

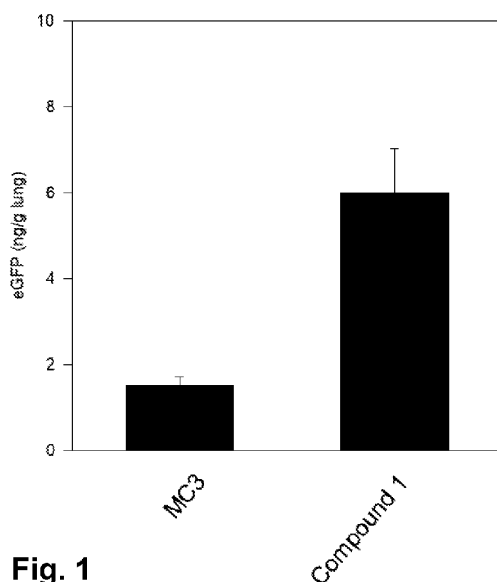


Fig. 1

(57) Abstract: Disclosed herein are compounds of Formula (I), Formula (III) or Formula (IIIa), or pharmaceutically acceptable salts thereof, wherein A, L, X¹, X², a, b, R¹ and R² are as defined herein. Also disclosed are lipid nanoparticles comprising a compound of Formula (I), Formula (III) or Formula (IIIa), or a pharmaceutically acceptable salt thereof; pharmaceutical compositions comprising a plurality of lipid nanoparticles comprising a compound of Formula (I), Formula (III) or Formula (IIIa), or a pharmaceutically acceptable salt thereof and a nucleic acid segment; as well as methods for delivering a nucleic acid segment comprising administering a plurality of lipid nanoparticles comprising a compound of Formula (I), Formula (III) or Formula (IIIa), or a pharmaceutically acceptable salt thereof, and a nucleic acid segment.

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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*