

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
09 March 2023 (09.03.2023)



(10) International Publication Number
WO 2023/031394 A1

(51) International Patent Classification:

A61K 9/51 (2006.01) *A61P 31/04* (2006.01)
A61K 47/60 (2017.01) *A61P 31/12* (2006.01)
A61K 47/69 (2017.01) *A61P 35/00* (2006.01)

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, 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).

(21) International Application Number:

PCT/EP2022/074439

(22) International Filing Date:

02 September 2022 (02.09.2022)

Published:

— with international search report (Art. 21(3))
— with sequence listing part of description (Rule 5.2(a))

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PCT/EP2021/074344
03 September 2021 (03.09.2021) EP
PCT/EP2021/086516
17 December 2021 (17.12.2021) EP
PCT/EP2022/051320
21 January 2022 (21.01.2022) EP

(71) Applicant: **CUREVAC SE** [DE/DE]; Friedrich-Miescher-Straße 15, 72076 Tübingen (DE).

(72) Inventors: **BAUMHOF, Patrick**; c/o IP DEPARTMENT, CureVac AG, Friedrich-Miescher-Straße 15, 72076 Tübingen (DE). **NAVARRO, Gemma**; c/o IP DEPARTMENT, CureVac AG, Friedrich-Miescher-Straße 15, 72076 Tübingen (DE). **BOLLHORST, Tobias**; c/o IP DEPARTMENT, CureVac AG, Friedrich-Miescher-Straße 15, 72076 Tübingen (DE). **PALMERSTON MENDES, Livia**; c/o IP DEPARTMENT, CureVac AG, Friedrich-Miescher-Straße 15, 72076 Tübingen (DE). **THIELE-SÜSS, Carolin**; c/o IP DEPARTMENT, CureVac AG, Friedrich-Miescher-Straße 15, 72076 Tübingen (DE).

(74) Agent: **MAIWALD GMBH**; Ledl, Andreas, Elisenhof, Elisenstr. 3, 80335 München (DE).

(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, ME, 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, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,

(54) Title: NOVEL LIPID NANOPARTICLES FOR DELIVERY OF NUCLEIC ACIDS

(57) Abstract: The invention relates to novel polymer conjugated lipids and to novel compositions comprising said novel polymer conjugated lipids useful for the delivery of nucleic acids into living cells.

WO 2023/031394 A1