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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
05 August 2021 (05.08.2021)

WIPO | PCT

(10) International Publication Number
WO 2021/155274 A1

(51) International Patent Classification:
A61K 9/51 (2006.01) *A61K 47/12* (2006.01)
A61K 9/127 (2006.01) *A61K 31/7088* (2006.01)

(21) International Application Number:
PCT/US2021/015888

(22) International Filing Date:
29 January 2021 (29.01.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/968,337 31 January 2020 (31.01.2020) US

(71) Applicant: **MODERNATX, INC.** [US/US]; 200 Technology Square, Cambridge, Massachusetts 02139 (US).

(72) Inventors; and
(71) Applicants: **SMITH, Mike** [US/US]; c/o ModernaTX, Inc., 200 Technology Square, Cambridge, Massachusetts 02139 (US). **AUER, Jason** [US/US]; c/o ModernaTX, Inc., 200 Technology Square, Cambridge, Massachusetts 02139 (US). **SKINNER, Brie** [US/US]; c/o ModernaTX, Inc., 200 Technology Square, Cambridge, Massachusetts 02139 (US).

(74) Agent: **SUN, Xixi** et al.; Cooley LLP, 1299 Pennsylvania Ave., Suite 700, Washington, District of Columbia 20004 (US).

(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, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, 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, 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).

Published:
— *with international search report (Art. 21(3))*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(54) Title: METHODS OF PREPARING LIPID NANOPARTICLES

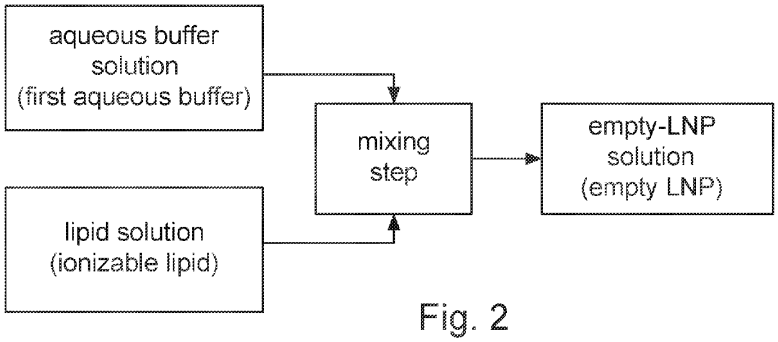


Fig. 2

(57) Abstract: The present disclosure provides methods of producing lipid nanoparticle (LNP) formulations and the produced LNP formulations thereof. The present disclosure also provides therapeutic and diagnostic uses related to the produced LNP formulations.

WO 2021/155274 A1