



(51) International Patent Classification:

A61K 9/51 (2006.01) A61K 38/00 (2006.01)
A61K 9/19 (2006.01) C12N 15/00 (2006.01)

(21) International Application Number:

PCT/US2022/053492

(22) International Filing Date:

20 December 2022 (20.12.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/291,686 20 December 2021 (20.12.2021) US
63/320,664 16 March 2022 (16.03.2022) US
63/401,214 26 August 2022 (26.08.2022) US

(71) Applicant: **SENDA BIOSCIENCES, INC.** [US/US]; 20
Acorn Park Drive, Suite 300, Cambridge, Massachusetts
02140 (US).

(72) Inventors: **MOSAHEB, Munir**; 20 Acorn Park Drive,
Suite 300, Cambridge, Massachusetts 02140 (US). **PATEL,
Siddharth**; 20 Acorn Park Drive, Suite 300, Cambridge,
Massachusetts 02140 (US). **CLARK, Stacie**; 20 Acorn
Park Drive, Suite 300, Cambridge, Massachusetts 02140
(US). **ARAFA, Emad**; 20 Acorn Park Drive, Suite 300,
Cambridge, Massachusetts 02140 (US). **BOGORAD, Ro-**

man; 20 Acorn Park Drive, Suite 300, Cambridge, Massa-
chusetts 02140 (US).

(74) Agent: **TOWNES, Jeffrey**; Cozen O'Connor, 1200 19th
Street NW, Washington, District of Columbia 20036 (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, 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: COMPOSITIONS COMPRISING MRNA AND LIPID RECONSTRUCTED PLANT MESSENGER PACKS

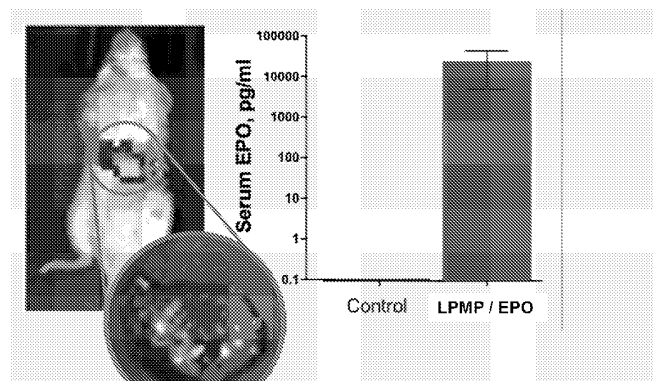


Figure 1

(57) Abstract: Disclosed herein are mRNA therapeutic compositions including one or more polynucleotides encoding one or more tumor antigenic, immunogenic, or signaling polypeptides, formulated within a lipid reconstructed plant messenger packs (LPMPs) comprising natural lipids and an ionizable lipid. The disclosure also includes a method for making a mRNA therapeutic composition, comprising reconstituting a film comprising purified PMP lipids in the presence of an ionizable lipid to produce a LPMP comprising the ionizable lipid, and loading into the LPMPs with one or more polynucleotides encoding one or more tumor antigenic or immunogenic polypeptides.

[Continued on next page]

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))*