

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number
WO 2022/266511 A8

(43) International Publication Date
22 December 2022 (22.12.2022)

WIPO | PCT

(51) International Patent Classification:

C12N 15/62 (2006.01) A61K 39/215 (2006.01)
C12N 15/85 (2006.01) A61K 39/295 (2006.01)
C12N 7/00 (2006.01) C07K 14/005 (2006.01)
A61K 39/00 (2006.01) A61K 31/7088 (2006.01)
A61K 39/12 (2006.01) A61P 31/14 (2006.01)
A61K 39/145 (2006.01)

63/275,398

03 November 2021 (03.11.2021) US

(71) Applicant: **ELIXIRGEN THERAPEUTICS, INC.**
[US/US]; 855 North Wolfe Street, Suite 624, Baltimore,
Maryland 21205 (US).

(72) Inventor: **KO, Minoru S., H.;** c/o Elixigen Therapeutics,
Inc., 855 North Wolfe Street, Suite 624, Baltimore, Mary-
land 21205 (US).

(21) International Application Number:

PCT/US2022/034104

(74) Agent: **LEKUTIS, Christine et al.;** Morrison & Foerster
LLP, 425 Market Street, San Francisco, California 94105
(US).

(22) International Filing Date:

17 June 2022 (17.06.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/211,974 17 June 2021 (17.06.2021) US
63/240,278 02 September 2021 (02.09.2021) 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, IQ, IR, IS, IT, JM, JO, JP, KE, KG,

(54) Title: TEMPERATURE-CONTROLLABLE, SELF-REPLICATING RNA VACCINES FOR VIRAL DISEASES

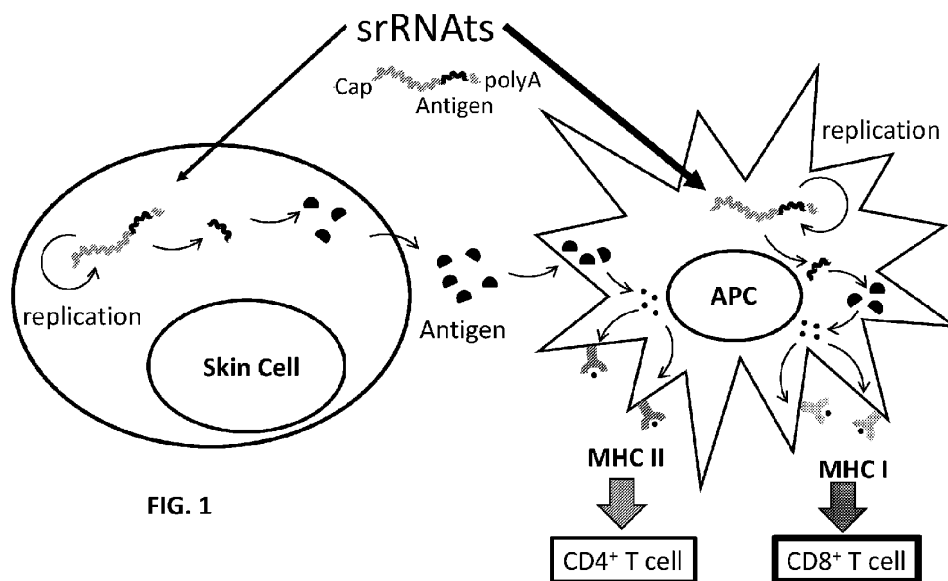


FIG. 1

(57) Abstract: The present disclosure relates to mRNA, self-replicating RNA, and temperature-sensitive, self-replicating RNA encoding a coronavirus nucleocapsid protein or an influenza virus nucleocapsid protein in operable combination with a mammalian signal peptide. The present disclosure relates to mRNA, self-replicating RNA, and temperature-sensitive, self-replicating RNA encoding other viral nucleocapsid protein(s) in operable combination with a mammalian signal peptide. The RNA constructs are suitable for active immunization against a virus in a mammalian subject, such as a human subject.

[Continued on next page]

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, SC, 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).

Declarations under Rule 4.17:

- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
— *with sequence listing part of description (Rule 5.2(a))*
— *with information concerning authorization of rectification of an obvious mistake under Rule 91.3 (b) (Rule 48.2(i))*

(48) Date of publication of this corrected version:

09 November 2023 (09.11.2023)

(15) Information about Correction:

see Notice of 09 November 2023 (09.11.2023)

Previous Correction:

see Notice of 13 July 2023 (13.07.2023)