

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number

WO 2021/236980 A8

(43) International Publication Date
25 November 2021 (25.11.2021)

WIPO | PCT

(51) International Patent Classification:

A61K 39/12 (2006.01) A61P 31/14 (2006.01)
A61K 39/145 (2006.01) A61P 31/16 (2006.01)
A61K 39/215 (2006.01) C12N 15/00 (2006.01)

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).

(21) International Application Number:

PCT/US2021/033490

(22) International Filing Date:

20 May 2021 (20.05.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/027,932	20 May 2020 (20.05.2020)	US
63/034,704	04 June 2020 (04.06.2020)	US
63/068,936	21 August 2020 (21.08.2020)	US
63/074,442	03 September 2020 (03.09.2020)	US
63/125,778	15 December 2020 (15.12.2020)	US

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

Published:

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

(48) Date of publication of this corrected version:

13 January 2022 (13.01.2022)

(15) Information about Correction:

see Notice of 13 January 2022 (13.01.2022)

(71) Applicant: **FLAGSHIP PIONEERING INNOVATIONS VI, LLC** [US/US]; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US).

(72) Inventors: **ECHELARD, Yann Paul Guy, Régis**; 241 Perkins Street, I-202, Jamaica Plain, MA 02130 (US). **KAHVEJIAN, Avak**; 52 Locust Avenue, Lexington, MA 02421-5832 (US). **DE BOER, Alexandra, Sophie**; 39 Oak Street, Unit B, Somerville, MA 02143 (US). **PLUGIS, Nicholas, McCartney**; 940 Tremont Street, Duxbury, MA 02332 (US). **HAJJAR, Roger, Joseph**; 169 North Street, Lexington, MA 02420 (US). **MELFI, Michael, Donato**; 477 Massachusetts Avenue, Apt. 5, Boston, MA 02118 (US). **NELSON, Jennifer, A.**; 465 Washington Street #2, Brookline, MA 02446 (US).

(74) Agent: **BELLIVEAU, Michael, J.** et al.; Clark & Elbing LLP, 101 Federal Street, 15th Floor, Boston, MA 02110 (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,

(54) Title: CORONAVIRUS ANTIGEN COMPOSITIONS AND THEIR USES

(57) Abstract: The disclosure provides compositions and methods comprising circular polyribonucleotides comprising a sequence encoding a coronavirus antigen, and compositions and methods comprising linear polyribonucleotides comprising a sequence encoding a coronavirus antigen. Compositions and methods are provided that are related to generating polyclonal antibodies, for example, using the disclosed circular polyribonucleotides or the disclosed linear polyribonucleotides.



WO 2021/236980 A8