

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
23 November 2023 (23.11.2023)



(10) International Publication Number
WO 2023/225593 A3

(51) International Patent Classification:

C07K 14/01 (2006.01) C12N 7/00 (2006.01)
C12N 15/86 (2006.01) A61K 35/76 (2015.01)

(21) International Application Number:

PCT/US2023/067168

(22) International Filing Date:

18 May 2023 (18.05.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/344,019 19 May 2022 (19.05.2022) US
63/387,337 14 December 2022 (14.12.2022) US

(71) Applicant: **FLAGSHIP PIONEERING INNOVATIONS V, INC.** [US/US]; 55 Cambridge Parkway, 8th Floor, Cambridge, Massachusetts 02142 (US).

(72) Inventors: **SWANSON, Kurt Adam**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US). **DELAGRAVE, Simon**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US). **LIU, Shu-Hao**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US). **COHEN, Noah Robert**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US). **KHAN, Amir**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US). **YOZWIAK, Nathan Lawrence**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US). **ARZE, Cesar Augusto**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US). **HAJJAR, Roger Joseph**; 55 Cambridge Parkway, Suite 800E, Cambridge, Massachusetts 02142 (US).

(74) Agent: **YANG, Peter** et al.; K&L Gates LLP, One Lincoln Street, Boston, Massachusetts 02111 (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, MU, 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, 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, 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).

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))
- with sequence listing part of description (Rule 5.2(a))

(88) Date of publication of the international search report:

28 December 2023 (28.12.2023)

WO 2023/225593 A3

(54) Title: COMPOSITIONS COMPRISING MODIFIED ANELLOVIRUS CAPSID PROTEINS AND USES THEREOF

(57) Abstract: This invention relates generally to modified anellovirus capsid proteins, anellovectors, anelloVLPs, and compositions and uses thereof.