



(51) International Patent Classification:

A61K 35/76 (2015.01) *C12N 15/85* (2006.01)*A61K 35/768* (2015.01)

(21) International Application Number:

PCT/US2022/011450

(22) International Filing Date:

06 January 2022 (06.01.2022)

(25) Filing Language:

English

(26) Publication Language:

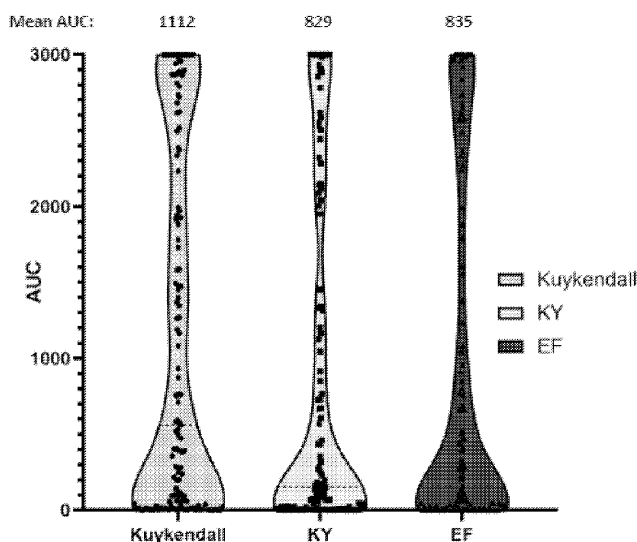
English

(30) Priority Data:

63/134,376	06 January 2021 (06.01.2021)	US
63/147,959	10 February 2021 (10.02.2021)	US
63/181,663	29 April 2021 (29.04.2021)	US
63/181,899	29 April 2021 (29.04.2021)	US
63/181,917	29 April 2021 (29.04.2021)	US

(71) Applicant: **ONCORUS, INC.** [US/US]; 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US).(72) Inventors: **LERNER, Lorena**; c/o ONCORUS, INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US). **KENNEDY, Edward M.**; c/o ONCORUS,INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US). **QUEVA, Christophe**; c/o ONCORUS, INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US). **DETERLING, Jessica**; c/o ONCORUS, INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US). **BRYANT, Jeffrey David**; c/o ONCORUS, INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US). **HU, Qi-Ying**; c/o ONCORUS, INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US). **CHEEMA, Tooba A.**; c/o ONCORUS, INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US). **ESSEX, Sean**; c/o ONCORUS, INC., 50 Hampshire Street, Suite 401, Cambridge, Massachusetts 02139 (US).(74) Agent: **SHI, Fumin** 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,

(54) Title: ENCAPSULATED RNA POLYNUCLEOTIDES AND METHODS OF USE

Fig. 12A

(57) Abstract: The present disclosure relates to recombinant RNA molecules encoding an oncolytic virus genome. The present disclosure further relates to the encapsulation of the recombinant RNA molecules and the use of the recombinant RNA molecules and/or particles for the treatment and prevention of cancer.

[Continued on next page]

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