



(51) International Patent Classification:

A61K 39/00 (2006.01) *C07K 14/54* (2006.01)
A61K 39/17 (2006.01) *C07K 16/28* (2006.01)
A61K 39/395 (2006.01) *C12N 15/86* (2006.01)
A61K 35/768 (2015.01) *A61P 35/00* (2006.01)

(21) International Application Number:

PCT/US2018/032255

(22) International Filing Date:

11 May 2018 (11.05.2018)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/505,759 12 May 2017 (12.05.2017) US
 62/507,690 17 May 2017 (17.05.2017) US

(71) Applicants: **ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI** [US/US]; One Gustave L. Levy Place, New York, NY 10029 (US). **MEMORIAL SLOAN KETTERING CANCER CENTER** [US/US]; 1275 York Av-

enue, New York, NY 10065 (US). **MERCK SHARP & DOHME CORP.** [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065 (US).

(72) Inventors: **PALESE, Peter**; 40 East 94th Street, Apt. 16C, New York, NY 10128 (US). **GARCIA-SASTRE, Adolfo**; 16 East 96th Street, New York, NY 10128 (US). **ZAMARIN, Dmitriy**; 370 East 76th Street, New York, NY 10021 (US). **SADEKOVA, Svetlana**; 2579 Dell Avenue, Mountain View, CA 94043 (US). **ALTURA, Rachel, Allison**; 84 West St., Belle Mead, NJ 08502 (US). **PHAN, Uyen**; 88 Bush St., Unit 2161, San Jose, CA 95126 (US). **HAINES, Brian, B.**; 39 Green Street, Jamaica Plain, MA 02130 (US). **WOLCHOK, Jedd, D.**; 333 East 30th Street, New York, NY 10016 (US).

(74) Agent: **CHHEDA, Jennifer, J.** et al.; Jones Day, 250 Vesey Street, New York, NY 10281-1047 (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,

(54) Title: NEWCASTLE DISEASE VIRUSES AND USES THEREOF

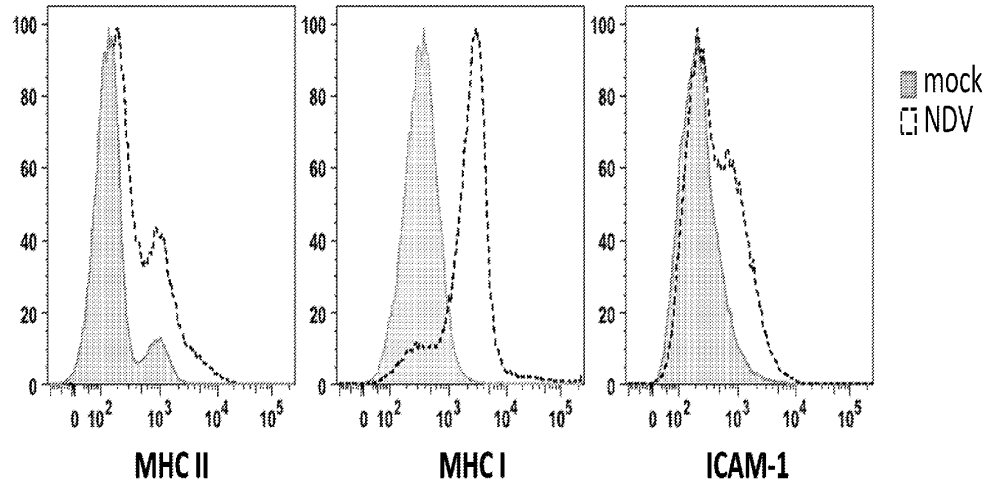


Fig. 1

(57) Abstract: Described herein are chimeric Newcastle disease viruses comprising a packaged genome comprising a transgene encoding interleukin-12. The chimeric Newcastle disease viruses and compositions thereof are useful in combination with an antagonist of programmed cell death protein 1 ("PD-1") or a ligand thereof in the treatment of cancer. In particular, described herein are methods for treating cancer comprising administering the chimeric Newcastle disease viruses in combination with an antagonist of PD-1 or a ligand thereof, wherein the chimeric Newcastle disease virus comprises a packaged genome comprising a transgene encoding interleukin-12.

[Continued on next page]

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, 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, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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)*)

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

20 December 2018 (20.12.2018)