



(51) International Patent Classification:

C12N 15/867 (2006.01) A61K 35/17 (2015.01)
C12N 5/10 (2006.01) A61P 35/00 (2006.01)
C12N 5/00 (2006.01)

(21) International Application Number:

PCT/US2022/014247

(22) International Filing Date:

28 January 2022 (28.01.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/142,730 28 January 2021 (28.01.2021) US
63/302,225 24 January 2022 (24.01.2022) US

(71) Applicant: ALLOGENE THERAPEUTICS, INC.

[US/US]; 210 East Grand Avenue, South San Francisco,
California 94080 (US).

(72) Inventors: LUMAN, Todd; c/o Allogene Therapeutics,

Inc., 210 E. Grand Avenue, South San Francisco, California

94080 (US). **ZARAGOZA, Josergio**; c/o Allogene Therapeutics, Inc., 210 E. Grand Avenue, South San Francisco, California 94080 (US). **GERMANSDERFER, Abraham**; 830 SW 22nd St, Boca Raton, Florida 33486 (US). **RAO, Suma**; c/o Allogene Therapeutics, Inc., 210 E. Grand Avenue, South San Francisco, California 94080 (US). **NI, Yajin**; 8479 Lower Scarborough Lane, San Diego, California 92127 (US). **ZHANG, Chupei**; 1652 Dolores St. Apt 8, San Francisco, California 94110 (US). **HUANG, Tom Tao**; 5322 Matthew Terrace, Fremont, California 94555 (US).

(74) Agent: **CHANG, Y. Elaine** et al.; Allogene Therapeutics, Inc., 210 East Grand Avenue, South San Francisco, California 94080 (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,

(54) Title: METHODS FOR TRANSDUCING IMMUNE CELLS

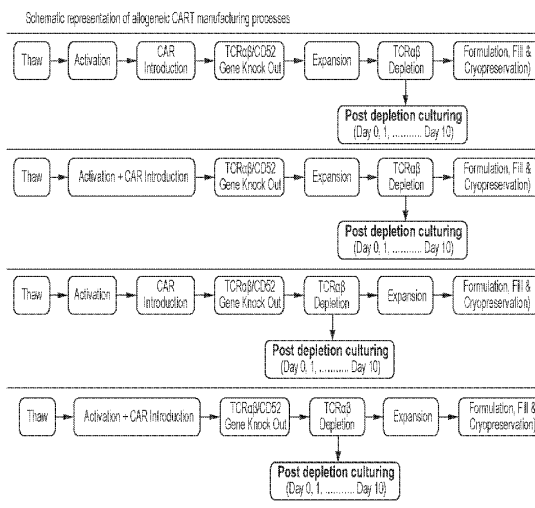


FIG. 1

(57) Abstract: Provided herein are improved methods for transducing immune cells, such as T cells, with retroviral vectors to express exogenous gene products, such as chimeric antigen receptors (CARs). Provided herein are methods that increase transduction efficiency thereby increasing the percentage of immune cells in a population expressing the exogenous gene product. Associated cells, cell populations, compositions and methods of use are also provided.

[Continued on next page]

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).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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))*