



(51) International Patent Classification:

A61K 39/00 (2006.01) C12N 15/867 (2006.01)
A61K 48/00 (2006.01) C07K 14/725 (2006.01)

(21) International Application Number:

PCT/US2021/015267

(22) International Filing Date:

27 January 2021 (27.01.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/968,028 30 January 2020 (30.01.2020) US

(71) Applicant: UMOJA BIOPHARMA, INC. [US/US]; 454 N. 34th Street, Seattle, Washington 98103 (US).

(72) Inventors; and

(71) Applicants: SCHARENBERG, Andrew [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US). CRISMAN, Ryan [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US). NICOLAI, Christopher [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washing-

ton 98103 (US). SULLIVAN, Alessandra [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US). MICHELS, Kathryn [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US). RYU, Byoung [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US). GREEN, Shon [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US). BEITZ, Laurie [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US). HERNANDEZ, Susana [US/US]; c/o Umoja Biopharma, Inc., 454 N. 34th Street, Seattle, Washington 98103 (US).

(74) Agent: CHRISTIANSEN, William T. et al.; Cooley LLP, 1299 Pennsylvania Ave., NW, 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, 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: BISPECIFIC TRANSDUCTION ENHANCER

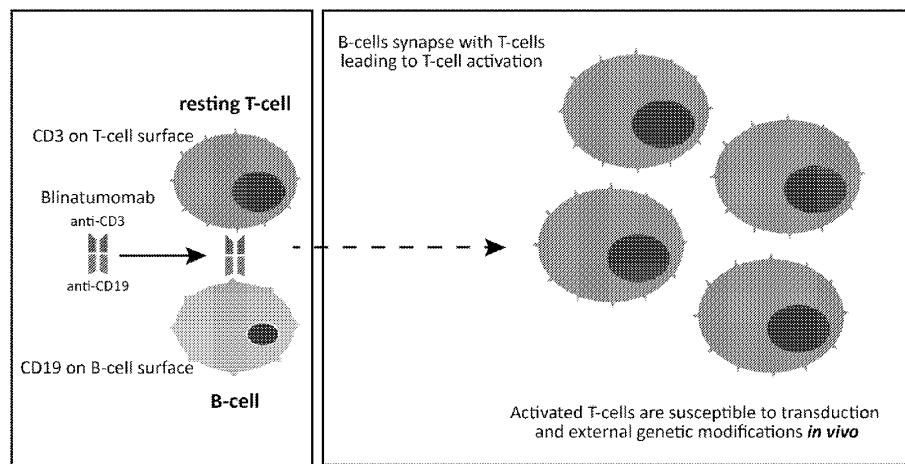


FIG. 1

(57) Abstract: Provided are compositions and methods for transducing immune cells *in vivo* where a multispecific antibody (e.g. a bispecific T-cell engager) is administered to render immune cells in the subject more transducible by a vector, such as a lentiviral vector.

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