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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 December 2024 (12.12.2024)

WIPO | PCT

(10) International Publication Number
WO 2024/253598 A1

(51) International Patent Classification:
C12N 5/10 (2006.01) *A61K 25/17* (2006.01)
C07K 14/725 (2006.01) *A61P 35/00* (2006.01)
C07K 16/28 (2006.01)

(21) International Application Number:
PCT/SG2024/050386

(22) International Filing Date:
07 June 2024 (07.06.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10202301604Y 07 June 2023 (07.06.2023) SG

(71) Applicant: **AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH** [SG/SG]; 1 Fusionopolis Way, #20-10 Connexis North Tower, Singapore 138632 (SG).

(72) Inventors: **WANG, Cheng-I**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG). **HU, Yuanyu**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG). **WANG, Bei**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG). **YEAP, Yee Chin, Yvonne**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG). **NGOH, Zi Xian Eve**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG). **LEE, Wen-Hsin**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG). **SOH, Mun Kuen**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG). **MOHD SALLEH, Siti Nazihah**; 8A Biomedical Grove, #03-06 Immunos, Singapore 138648 (SG).

(74) Agent: **TECK YEOW, Lim**; Donaldson & Burkinshaw LLP, P.O. Box 3667 Robinson Road Post Office, Singapore 905667 (SG).

(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,

(54) Title: GPC3 CHIMERIC ANTIGEN RECEPTOR SECRETING

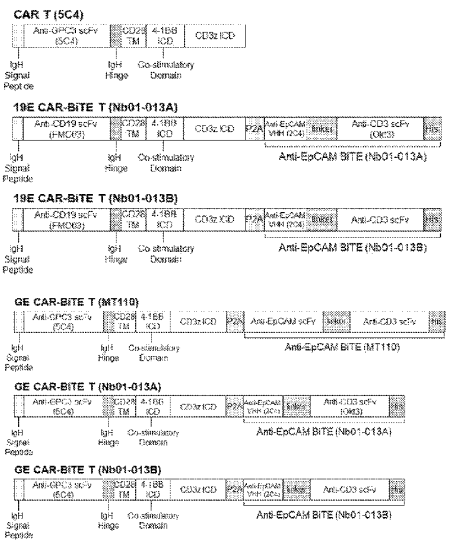


Figure 7A

(57) Abstract: There is provided a modified cell expressing (a) a chimeric antigen receptor targeting GPC3 and/or CD19, and (b) a multi-specific antigen binding protein, variant or binding fragment thereof that binds one or more target, comprising a first antigen binding protein, variant or binding fragment thereof that binds to EpCAM (epithelial cell adhesion molecule) and a second antigen binding protein, variant or binding fragment thereof that binds to an immune cell marker, wherein the first antigen binding protein, variant or binding fragment thereof that binds to EpCAM comprises a heavy chain variable region and/or a light chain variable region comprise sequences as disclosed herein. Also disclosed are methods of producing/generating the cell as disclosed herein and methods of treatment employing the cell as disclosed herein.

WO 2024/253598 A1

[Continued on next page]

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).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*

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