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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 February 2023 (16.02.2023)

WIPO | PCT

(10) International Publication Number
WO 2023/016348 A1

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61P 35/00* (2006.01)

(21) International Application Number:
PCT/CN2022/110314

(22) International Filing Date:
04 August 2022 (04.08.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
202110909032.3 09 August 2021 (09.08.2021) CN

(71) Applicant: **HARBOUR BIOMED (SHANGHAI) CO., LTD** [CN/CN]; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN).

(72) Inventors: **JHENG, Ming-Jin**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **WANG, Yongqiang**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **ZHANG, Yun**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **ZHAO, Chuchu**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **YANG, Yunxing**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **CHEN, Fei**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **QIN, Beibei**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **WU, Yuetao**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN). **DING, Yi**; 6F-7F, No. 987, Cailun Road, Pilot Free Trade Zone, Shanghai 201203 (CN).

(74) Agent: **CHINA PATENT AGENT (H.K.) LTD.**; 22/F., Great Eagle Center, 23 Harbour Road Wanchai, Hong Kong (CN).

(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, ME, MG, MK, MN, MW, MX, MY, MZ, NA,

(54) Title: CLDN18.2-TARGETING ANTIBODY, BISPECIFIC ANTIBODY AND USE THEREOF

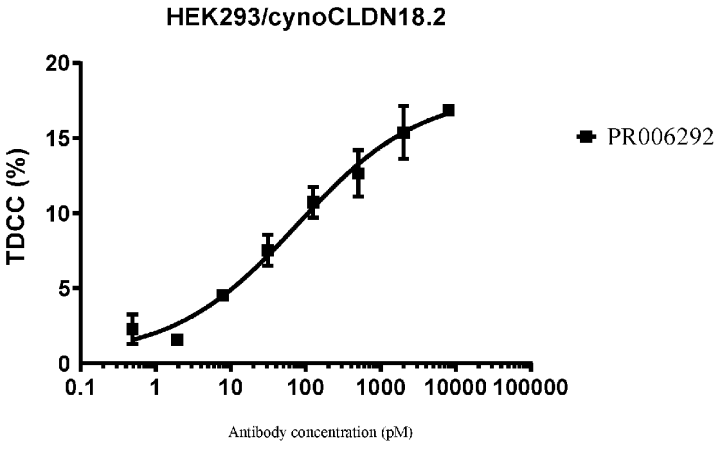


FIG. 9

(57) Abstract: The present invention discloses CLDN18.2-targeting antibodies, bispecific antibodies and use thereof. The CLDN18.2-targeting antibody is a single-domain heavy-chain antibody that has high affinity for tumor cells endogenously expressing CLDN18.2 and can induce high endocytic activity. The bispecific antibody can target CLDN18.2 and CD3 and retains the binding effect of an Fc to an FcRn; meanwhile, a mutant Fc is preferred so as to reduce the binding to an FcgR and thus the activation of non-specific T cells caused by the cross-linking of an FcgR. The CD3-terminus activity is optimized so that the release of common cytokines in CRS, such as IL6 and TNFα can be reduced.

WO 2023/016348 A1

[Continued on next page]

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).

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))*