

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
03 August 2023 (03.08.2023)



(10) International Publication Number
WO 2023/143443 A1

(51) International Patent Classification:

C12N 15/63 (2006.01) A61P 37/06 (2006.01)
C07K 14/705 (2006.01)

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).

(21) International Application Number:

PCT/CN2023/073331

(22) International Filing Date:

20 January 2023 (20.01.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PCT/CN2022/073625

25 January 2022 (25.01.2022) CN

(71) Applicants: **BRL MEDICINE INC.** [CN/CN]; Floor 1,
Building 14, No. 3699, Yuanjiang Road, Minhang Dis-
trict, Shanghai 201109 (CN). **EAST CHINA NORMAL
UNIVERSITY** [CN/CN]; 500 Dongchuan Road, Minhang
District, Shanghai 200241 (CN).

(72) Inventors: **TAN, Binghe**; Floor 1, Building 14, No. 3699,
Yuanjiang Road, Minhang District, Shanghai 201109 (CN).
DU, Bing; 500 Dongchuan Road, Minhang District, Shang-
hai 200241 (CN). **SHI, Xiujuan**; Floor 1, Building 14,
No. 3699, Yuanjiang Road, Minhang District, Shanghai
201109 (CN). **ZHANG, Jiqin**; 500 Dongchuan Road, Min-
hang District, Shanghai 200241 (CN). **LIU, Mingyao**;
500 Dongchuan Road, Minhang District, Shanghai 200241
(CN). **XI, Zaixi**; Floor 1, Building 14, No. 3699, Yuanjiang
Road, Minhang District, Shanghai 201109 (CN).

(74) Agent: **JUN HE LAW OFFICES**; 20/F, China Resources
Building, 8 Jianguomenbei Avenue, Dongcheng District,
Beijing 100005 (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, 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, 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, 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,

(54) Title: MODIFIED CELLS AND USES THEREOF

(57) Abstract: Provided are modified immune cells, proteins encoding PD-L1 variants and polynucleotides encoding the same. Phar-
maceutical compositions comprising the same and methods of treating diseases are also provided.

WO 2023/143443 A1