

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 September 2024 (26.09.2024)



(10) International Publication Number
WO 2024/193546 A1

(51) International Patent Classification:

C07K 14/54 (2006.01) A61K 38/20 (2006.01)
C07K 19/00 (2006.01) A61K 35/00 (2006.01)
C12N 15/24 (2006.01)

(21) International Application Number:

PCT/CN2024/082466

(22) International Filing Date:

19 March 2024 (19.03.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/453399 20 March 2023 (20.03.2023) US

(71) Applicant: **FBD BIOLOGICS LIMITED** [CN/CN];

Room 5, Flat 02-03, 20/F, Empress Plaza 17-19 Chatham
Road South Tsim Sha Tsui, Kowloon, Hong Kong (CN).

(72) Inventors: **LIN, Chun-Yu**; 5F, No. 1, Sec. 1, Tiding Blvd.

Neihu Dist. Taipei City 114, Taiwan (CN). **CHEN, I-Yin**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **CHEN, I-Chun**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **LIAO, Yi-Shin**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **HSIEH, Yi-Chun**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **CHUANG, Hsiang-Chun**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **HSIEH, Hsin-Tzu**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **LU, Yi-Hsuan**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **CHUANG, Chia-Yeh**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **SHEN, Tsai-Kuei**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **LIN, Yung-Chu**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **LI, Yen-Cheng**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **CHEN, Yu-Chien**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **LU, Ying-Shao**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **LEE, Chun-Hsien**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **SHIH, Chiu-Yueh**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **TSENG, Chi-Ling**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN). **JUO, Zong Sean**; 5F, No. 1, Sec. 1, Tiding Blvd. Neihu Dist. Taipei City 114, Taiwan (CN).

(74) Agent: **LINDA LIU & PARTNERS**; F16 Tower C, Beijing Global Trade Center, 36 North Third Ring East Road, Dongcheng District, Beijing 100013 (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, 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, 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).

Published:

- with international search report (Art. 21(3))
- with sequence listing part of description (Rule 5.2(a))

(54) Title: ENGINEERED IL-21 VARIANTS AND METHODS OF USE THEREOF

(57) Abstract: This disclosure relates to engineered IL-21 variants, and methods of use thereof. In some embodiments, the engineered IL-21 variants include a non-native disulfide bond.

WO 2024/193546 A1