(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 2024/254567 A2

(51) International Patent Classification:
C07K 16/24 (2006.01) *A61K 39/395* (2006.01)

(21) International Application Number:
PCT/US2024/033162

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

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/506,798 07 June 2023 (07.06.2023) US
63/511,122 29 June 2023 (29.06.2023) US

(71) Applicant: **SYNTHEKINE, INC.** [US/US]; 1505 O'Brien Drive, Suite D, Menlo Park, California 94025 (US).

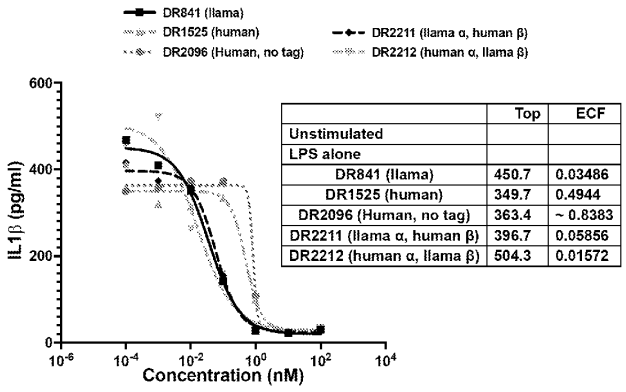
(72) Inventors: **LUPARDUS, Patrick L.**; c/o Synthekine, Inc., 1505 O'Brien Drive, Suite D, Menlo Park, California 94025 (US). **MORIN, Andrew**; c/o Synthekine, Inc., 1505 O'Brien Drive, Suite D, Menlo Park, California 94025 (US). **RAMADASS, Mahalakshmi**; c/o Synthekine, Inc., 1505 O'Brien Drive, Suite D, Menlo Park, California 94025 (US). **ROKKAM, Deepti**; c/o Synthekine, Inc., 1505 O'Brien Drive, Suite D, Menlo Park, California 94025 (US). **TOTAGRANDE, Michael**; c/o Synthekine, Inc., 1505 O'Brien Drive, Suite D, Menlo Park, California 94025 (US). **VIVANO, Sandro**; c/o Synthekine, Inc., 1505 O'Brien Drive, Suite D, Menlo Park, California 94025 (US).

(74) Agent: **YAO, Zhengzheng** et al.; Kilpatrick Townsend & Stockton LLP, Mailstop: IP Docketing - 22, 1100 Peachtree Street, Suite 2800, Atlanta, Georgia 30309 (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, 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,

(54) Title: HUMANIZED IL-10 RECEPTOR BINDING MOLECULES AND METHODS OF USE



	Top	ECF
Unstimulated		
LPS alone		
DR841 (llama)	450.7	0.03486
DR1525 (human)	349.7	0.4944
DR2096 (Human, no tag)	363.4	~ 0.8383
DR2211 (llama α, human β)	396.7	0.05856
DR2212 (human α, llama β)	504.3	0.01572

FIG. 1

(57) Abstract: Provided herein are humanized IL-10 agonists that bind to IL-10Rα and IL-10Rβ and comprise an IL-10Rα single-domain antibody and an IL-10Rβ single-domain antibody.

[Continued on next page]

WO 2024/254567 A2

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:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*