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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 August 2024 (22.08.2024)

WIPO | PCT

(10) International Publication Number
WO 2024/170627 A1

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61P 35/02* (2006.01)
A61K 39/00 (2006.01)

(21) International Application Number:
PCT/EP2024/053734

(22) International Filing Date:
14 February 2024 (14.02.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
23382147.9 15 February 2023 (15.02.2023) EP

(71) Applicants: **FUNDACIÓ INSTITUT DE RECERCA CONTRA LA LEUCÈMIA JOSEP CARRERAS** [ES/ES]; Ctra. de Can Ruti, Camí de les Escoles s/n, 08916 Badalona (ES). **INSTITUCIÓ CATALANA DE RECERCA I ESTUDIS AVANÇATS** [ES/ES]; Passeig Lluís Companys, 23, 08010 Barcelona (ES). **ONECHAIN IMMUNOTHERAPEUTICS SL** [ES/ES]; C/ Muntaner 383, 08021 Barcelona (ES). **FUNDACIÓ INSTITUT D'INVESTIGACIÓ EN CIÈNCIES DE LA SALUT GERMANS TRIAS I PUJOL** [ES/ES]; Carretera de Can Ruti, Camí de les Escoles s/n, 08916 Badalona (ES).

(72) Inventors: **MENÉNDEZ BUJÁN, Pablo**; FUNDACIÓ INSTITUT DE RECERCA CONTRA LA LEUCÈMIA JOSEP CARRERAS, Ctra. de Can Ruti, Camí de les Escoles s/n, 08916 Badalona (ES). **SÁNCHEZ MARTÍNEZ, Diego**; FUNDACIÓ INSTITUT DE RECERCA CONTRA LA LEUCÈMIA JOSEP CARRERAS, Ctra. de Can Ruti, Camí de les Escoles s/n, 08916 Badalona (ES). **TIRADO CABRERA, Néstor**; FUNDACIÓ INSTITUT DE RECERCA CONTRA LA LEUCÈMIA JOSEP CARRERAS, Ctra. de Can Ruti, Camí de les Escoles s/n, 08916 Badalona (ES). **FERNÁNDEZ FUENTES, Narciso**; FUNDACIÓ INSTITUT DE RECERCA CONTRA LA LEUCÈMIA JOSEP CARRERAS, Ctra. de Can Ruti, Camí de les Escoles s/n, 08916 Badalona (ES). **DÍAZ CORTÉS, Víctor Manuel**; Onechain Immunotherapeutics SL, C/ Muntaner 383, 08021 Barcelona (ES). **MANSILLA LÓPEZ, María José**; Onechain Immunotherapeutics SL, C/ Muntaner 383, 08021 Barcelona (ES). **GARCÍA PÉREZ, Alba**; Onechain Immunotherapeutics SL, C/ Muntaner 383, 08021 Barcelona (ES).

(74) Agent: **HOFFMANN EITLE S.L.U.**; Paseo de la Castellana 140, 3ª Planta, Edificio Lima, 28046 Madrid (ES).

(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))*
— *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))*

(54) Title: CCR9 TARGETING MOIETY FOR THE TREATMENT OF CCR9-POSITIVE CANCER

(57) Abstract: The present invention provides therapeutics for the treatment of CCR9-positive cancers such as T-cell acute lymphoblastic leukemia. In particular, the present invention provides a CCR9 targeting moiety. The present invention furthermore relates to a CCR9 targeting moiety comprising a further targeting moiety, preferably a CD1a targeting moiety, a dual CAR comprising a CCR9 and a CD1a targeting moiety, their use in the treatment of CCR9 and/or CD1a positive cancers, and the use of a CCR9 targeting moiety and a separate CD1a targeting moiety for such treatment.

WO 2024/170627 A1