

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
15 December 2022 (15.12.2022)



(10) International Publication Number
WO 2022/261136 A1

(51) International Patent Classification:

C12N 15/09 (2006.01) A61K 48/0066 (2006.01)
A61K 48/00 (2006.01) C07H 21/00 (2006.01)
A61K 48/005 (2006.01) C12N 15/00 (2006.01)

(21) International Application Number:

PCT/US2022/032561

(22) International Filing Date:

07 June 2022 (07.06.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/197,928 07 June 2021 (07.06.2021) US

(71) Applicant: **FLAGSHIP PIONEERING INNOVATIONS VII, LLC** [US/US]; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US).

(72) Inventors: **ROTHSCHILD, Adrienne, Marie**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **PLUGIS, Nicholas, McCartney**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **NICOD, Charlotte, Marie**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **MARSHALL, Stephen**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **KAHVEJIAN, Avak**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **ECHELARD, Yann, Paul Guy Régis**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **AFEYAN, Noubar, Boghos**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **AFEYAN, Raffi**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **CARLSON, Scott, Moore**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **KOHAR, Vivek**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US). **BLOM, Daniel**; 55 Cambridge Parkway, 8th Floor, Cambridge, MA 02142 (US).

(74) Agent: **ELBING, Karen, L.** et al.; Clark & Elbing LLP, 101 Federal Street, 15th Floor, Boston, MA 02110 (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, 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, 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 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))
- of inventorship (Rule 4.17(iv))

Published:

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

(54) Title: COMPOSITIONS AND METHODS FOR TARGETED DELIVERY OF THERAPEUTIC AGENTS

(57) Abstract: Macromolecule compositions and related methods that effect targeted delivery of therapeutic agents to effector targets in a desired cell, tissue and/or organ of interest while minimizing or avoiding undesirable delivery to other cells, tissues or organs are provided. Compositions and methods related to macromolecules, such as an ANDbody™, that include an effector target binding domain specific for an effector target, and an address binding domain specific for an address target are described.

WO 2022/261136 A1