

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
28 April 2022 (28.04.2022)



(10) International Publication Number
WO 2022/084560 A1

(51) International Patent Classification:

A61K 47/68 (2017.01) **C07K 16/28** (2006.01)

A61K 47/65 (2017.01) **A61P 35/00** (2006.01)

(21) International Application Number:

PCT/EP2021/079560

(22) International Filing Date:

25 October 2021 (25.10.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

20020492.3 25 October 2020 (25.10.2020) EP

20203887.3 26 October 2020 (26.10.2020) EP

(71) Applicant: **ARARIS BIOTECH AG** [CH/CH]; c/o ETH Zürich, HPL D16.2, Otto-Stern-Weg 7, 8093 Zürich (CH).

(72) Inventors: **SPYCHER, Philipp**; c/o ETH Zürich, HPL D16.2, Otto-Stern-Weg 7, 8093 Zürich (CH). **PROBST, Philipp**; c/o ETH Zürich, HPL D16.2, Otto-Stern-Weg 7, 8093 Zürich (CH). **ATTINGER-TOLLER, Isabella**; c/o ETH Zürich, HPL D16.2, Otto-Stern-Weg 7, 8093 Zürich (CH). **BERTRAND, Romain**; c/o ETH Zürich, HPL D16.2, Otto-Stern-Weg 7, 8093 Zürich (CH). **STARK, Ramona**; c/o ETH Zürich, HPL D16.2, Otto-Stern-Weg 7, 8093 Zürich (CH). **GRABULOVSKI, Dragan**; c/o ETH Zürich, HPL D16.2, Otto-Stern-Weg 7, 8093 Zürich (CH).

(74) Agent: **VOSSIUS & PARTNER PATENTANWÄLTE RECHTSANWÄLTE MBB**; Siebertstraße 3, 81675 München (DE).

(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, IR, IS, IT, 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).

Published:

— with international search report (Art. 21(3))

— with sequence listing part of description (Rule 5.2(a))

WO 2022/084560 A1

(54) Title: MEANS AND METHODS FOR PRODUCING ANTIBODY-LINKER CONJUGATES

(57) Abstract: The present invention relates to a method for generating an antibody-payload conjugate by means of a microbial transglutaminase (MTG). The method comprises a step of conjugating a linker comprising the structure (shown in N → C direction) (Sp₁)-RK-(Sp₂)-B-(Sp₃) or (Sp₁)-B-(Sp₂)-RK-(Sp₃) to a Gln residue comprised in an antibody, wherein (Sp₁) is a chemical spacer or is absent; (Sp₂) is a chemical spacer or is absent; (Sp₃) is a chemical spacer or is absent; R is arginine or an arginine derivative or an arginine mimetic; K is lysine or a lysine derivative or a lysine mimetic; B is a linking moiety or a payload; and wherein the linker is conjugated to the Gln residue comprised in the antibody via a primary amine comprised in the side chain of the lysine residue, the lysine derivative or the lysine mimetic. Further, the invention relates to antibody-linker conjugates, antibody-drug conjugates and linker constructs comprising an RK motif.