

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
19 May 2023 (19.05.2023)



(10) International Publication Number
WO 2023/086913 A3

(51) International Patent Classification:

A61K 38/22 (2006.01) C12N 15/62 (2006.01)
C07K 14/64 (2006.01)

(21) International Application Number:

PCT/US2022/079681

(22) International Filing Date:

11 November 2022 (11.11.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/263,917 11 November 2021 (11.11.2021) US

(71) Applicant: **TECTONIC THERAPEUTIC, INC.**
[US/US]; 490 Arsenal Way, Suite 210, Watertown, Massachusetts 02472 (US).

(72) Inventors: **DIENER, John**; c/o Tectonic Therapeutic, Inc., 490 Arsenal Way, Suite 210, Watertown, Massachusetts 02472 (US). **KRUSE, Andrew**; c/o Tectonic Therapeutic, Inc., 490 Arsenal Way, Suite 210, Watertown, Massachusetts 02472 (US). **GRUSWITZ, Franz**; c/o Tectonic Therapeutic, Inc., 490 Arsenal Way, Suite 210, Watertown, Massachusetts 02472 (US).

(74) Agent: **WILKINS, Andrew T.** et al.; c/o Dechert LLP, One International Place, 40th Floor, 100 Oliver Street, Boston, Massachusetts 02110-2605 (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, 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, 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))

(88) Date of publication of the international search report:

22 June 2023 (22.06.2023)

WO 2023/086913 A3

(54) Title: RELAXIN-2 FUSION PROTEIN ANALOGS AND METHODS OF USING SAME

(57) Abstract: Relaxin-2 exhibits strong antifibrotic activity. However, due to the limited in vivo half-life of relaxin, treatment of patients has to be repeated every 14 to 21 days, whereby compound administration has to be performed as a continuous infusion for at least 48 hours. Further, the synthesis of relaxin-2 is difficult. Due to the low solubility of the B-chain and the requirement for the laborious, specific introduction of cysteine bridges between A and B-chains, yields of active peptide obtained by these methods are extremely low. There is a need for an engineered relaxin-2 analog with greater half-life and greater ease in production. The present disclosure provides relaxin-2 fusion protein analogs with enhanced in vivo half-life and methods for making the same. Also disclosed herein are methods of treating relaxin-2-associated disorders or diseases using the relaxin-2 fusion protein analogs described herein.