

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
07 November 2024 (07.11.2024)



(10) International Publication Number
WO 2024/229072 A1

- (51) **International Patent Classification:**
C07K 16/24 (2006.01) A61P 19/02 (2006.01)
A61K 39/395 (2006.01)
- (21) **International Application Number:**
PCT/US2024/027158
- (22) **International Filing Date:**
01 May 2024 (01.05.2024)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
2306456.1 02 May 2023 (02.05.2023) GB
2401979.6 13 February 2024 (13.02.2024) GB
- (71) **Applicant:** 4E THERAPEUTICS, INC. [US/US]; 3800 N. Lamar Blvd. Suite 200, Austin, Texas 78756 (US).
- (72) **Inventors:** ERNFORS, Johan Patrik; c/o Karolinska Institutet, Biomedicum, C6, Solnavägen 9, 171 65 Solna (SE). SU, Jie; c/o Karolinska Institutet, Biomedicum, C6, Solnavägen 9, 171 65 Solna (SE). ZHANG, Mingdong; c/o Karolinska Institutet, Biomedicum, C6, Solnavägen 9, 171 65 Solna (SE). KUPARI, Jussi Antero; c/o Karolinska Institutet, Biomedicum, C6, Solnavägen 9, 171 65 Solna (SE).
- (74) **Agent:** D'AMATO, Erica M. 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, 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,

(54) **Title:** COMPOSITION, METHODS AND USES

(57) **Abstract:** The present disclosure relates to type I interferon inhibitors for use in treating or preventing pain associated with Rheumatoid Arthritis (RA) in a patient, related uses and kits, and methods for identifying a patient who has such pain and is in need of treatment with such an inhibitor.

WO 2024/229072 A1