

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 October 2023 (26.10.2023)



(10) International Publication Number
WO 2023/205463 A1

(51) International Patent Classification:

A61P 9/06 (2006.01) A61K 31/4709 (2006.01)
A61P 25/02 (2006.01) A61K 31/4375 (2006.01)
A61P 29/00 (2006.01) A61K 31/496 (2006.01)
C07D 215/233 (2006.01) A61K 31/55 (2006.01)
C07D 239/91 (2006.01) A61K 31/506 (2006.01)
C07D 401/04 (2006.01) A61K 31/517 (2006.01)
C07D 401/14 (2006.01) A61K 31/4985 (2006.01)
C07D 405/14 (2006.01) A61K 31/541 (2006.01)
C07D 471/04 (2006.01) A61K 31/553 (2006.01)
C07D 519/00 (2006.01)

(21) International Application Number:

PCT/US2023/019469

(22) International Filing Date:

21 April 2023 (21.04.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/333,875 22 April 2022 (22.04.2022) US

(71) Applicant: VERTEX PHARMACEUTICALS INCORPORATED [US/US]; 50 Northern Avenue, Boston, MA 02210 (US).

(72) Inventors: MILLER, Mark, Thomas; 50 Northern Avenue, Boston, MA 02210 (US). HURLEY, Dennis, James; 50 Northern Avenue, Boston, MA 02210 (US). NEUBERT, Timothy, Donald; 50 Northern Avenue, Boston, MA 02210 (US). ARUMUGAM, Vijayalaksmi; 50 Northern Avenue, Boston, MA 02210 (US). HADIDA RUAH, Sara, Sabina; 50 Northern Avenue, Boston, MA 02210 (US). MCCARTNEY, Jason; 50 Northern Avenue, Boston, MA 02210 (US). ZHOU, Jinglan; 50 Northern Avenue, Boston, MA 02210 (US). CHAU, Jaclyn; 50 Northern Avenue, Boston, MA 02210 (US). DEMORET, Robert, Martin; 50 Northern Avenue, Boston, MA 02210 (US). GHIRMAL, Senait, G.; 50 Northern Avenue, Boston, MA 02210 (US). VALIULIN, Roman, Askatovich; 50 Northern Avenue, Boston, MA 02210 (US). KINTZER, Alexander, Fredrik; 50 Northern Avenue, Boston, MA 02210 (US). SLOCHOWER, David, Robert; 50 Northern Avenue, Boston, MA 02210 (US). AERTGEERTS, Kathleen; 50 Northern Avenue, Boston, MA 02210 (US). BECK, Elizabeth, Mary; 50 Northern Avenue, Boston, MA 02210 (US). MUI, James, Jun Bon; 50 Northern Avenue, Boston, MA 02210 (US). WRIGHT, Miranda, Adele; 50 Northern Avenue, Boston, MA 02210 (US). KNEGTEL, Ronald,

Marcellus Alphonsus; 50 Northern Avenue, Boston, MA 02210 (US). CHUDYK, Ewa, Iwona; 50 Northern Avenue, Boston, MA 02210 (US).

(74) Agent: STURLIS, Steven et al.; Barnes & Thornburg LLP, 24 Frank Lloyd Wright Drive Suite A-3300, P.O. Box #511, Ann Arbor, MI 48105 (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, 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))

(54) Title: HETEROARYL COMPOUNDS FOR THE TREATMENT OF PAIN

(57) Abstract: Compounds, and pharmaceutically acceptable salts thereof, useful as inhibitors of sodium channels are provided. Also provided are pharmaceutical compositions comprising the compounds or pharmaceutically acceptable salts and methods of using the compounds, pharmaceutically acceptable salts, and pharmaceutical compositions in the treatment of various disorders, including pain.

WO 2023/205463 A1