

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
20 February 2025 (20.02.2025)



(10) International Publication Number
WO 2025/038917 A1

(51) International Patent Classification:

C07D 471/04 (2006.01) A61P 25/04 (2006.01)
C07D 497/04 (2006.01) A61P 25/08 (2006.01)
C07D 513/04 (2006.01) A61P 25/24 (2006.01)
C07D 487/04 (2006.01) A61K 31/4353 (2006.01)

(21) International Application Number:

PCT/US2024/042644

(22) International Filing Date:

16 August 2024 (16.08.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/520,171 17 August 2023 (17.08.2023) US
63/567,980 21 March 2024 (21.03.2024) US

(71) Applicant: **XENON PHARMACEUTICALS INC.**
[CA/CA]; 200-3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA).

(72) Inventors: **CLARK, Michael, Philip**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **DEHNHARDT, Christoph, Martin**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **ZENOVA, Alla, Yurevna**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **SAYYAD, Ashik, Ajij**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **SUN, Shaoyi**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **WANG, Hong**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **BARIGYE, Stephen, Jones**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **CHARIFSON, Paul, Scott**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA). **DARAMWAR, Pankaj, Pandharinath**; c/o Xenon Pharmaceuticals Inc., 3650 Gilmore Way, Burnaby, BC V5G 4W8 (CA).

(74) Agent: **HAMZIK, Philip, J.** et al.; Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210-2206 (US).

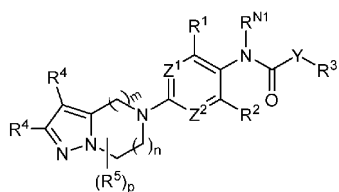
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, 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))
- 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))

(54) Title: HETEROARYL AMINE COMPOUNDS AND USES THEREOF



(I-b)

(57) Abstract: Provided herein are compounds, including compounds of any of the formulae described herein (e.g., Formula (I), e.g., Formula (I-b)), and pharmaceutically acceptable salts, stereoisomers, tautomers, solvates, hydrates, isotopically labeled derivatives, and prodrugs thereof. Compounds provided herein can act as potentiators of voltage-gates potassium channels (e.g., Kv7 potassium channels such as Kv7.2/Kv7.3) and are therefore useful in the treatment and/or prevention of diseases, disorders, and conditions (e.g., diseases, disorders, and conditions associated with Kv7 potassium channel dysfunction).

WO 2025/038917 A1