

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
10 November 2022 (10.11.2022)



(10) International Publication Number
WO 2022/236272 A3

(51) International Patent Classification:
C07D 253/075 (2006.01) A61P 25/04 (2006.01)
A61K 31/53 (2006.01)

TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2022/072095

(22) International Filing Date:
04 May 2022 (04.05.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/201,531 04 May 2021 (04.05.2021) US
63/263,811 09 November 2021 (09.11.2021) US

(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))

(71) Applicant: **VIGIL NEUROSCIENCE, INC.** [US/US];
One Broadway Suite 07-300, Cambridge, Massachusetts
02142 (US).

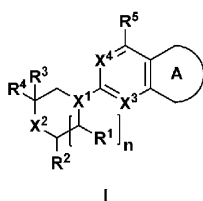
(88) Date of publication of the international search report:
22 December 2022 (22.12.2022)

(72) Inventors: **HOUZE, Jonathan B.**; c/o Vigil Neuroscience, Inc., One Broadway Suite 07-300, Cambridge, Massachusetts 02142 (US). **BOS, Maxence**; c/o NuChem Therapeutics Inc., 2350 Cohen Street, Suite 201, Saint-Laurent, Québec H4R 2N6 (CA). **MANCUSO, John**; c/o NuChem Therapeutics Inc., 2350 Cohen Street, Suite 201, Saint-Laurent, Québec H4R 2N6 (CA). **FRANZONI, Ivan**; c/o NuChem Therapeutics Inc., 2350 Cohen Street, Suite 201, Saint-Laurent, Québec H4R 2N6 (CA). **PANDYA, Bhau-mik**; c/o Vigil Neuroscience, Inc., One Broadway Suite 07-300, Cambridge, Massachusetts 02142 (US). **KAPLAN, Alan**; c/o Vigil Neuroscience, Inc., One Broadway Suite 07-300, Cambridge, Massachusetts 02142 (US).

(74) Agent: **REID, Andrea L.C.**; c/o Dechert LLP, One International Place, 40th Floor, 100 Oliver Street, Boston, Massachusetts 02110 (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, 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, 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,

(54) Title: HETEROCYCLIC COMPOUNDS AS TRIGGERING RECEPTOR EXPRESSED ON MYELOID CELLS 2 AGONISTS AND METHODS OF USE



(57) Abstract: The present disclosure provides compounds of Formula I, useful for the activation of Triggering Receptor Expressed on Myeloid Cells 2 ("TREM2"). This disclosure also provides pharmaceutical compositions comprising the compounds, uses of the compounds, and compositions for treatment of, for example, a neurodegenerative disorder. Further, the disclosure provides intermediates useful in the synthesis of compounds of Formula I.

WO 2022/236272 A3