

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
18 January 2024 (18.01.2024)



(10) International Publication Number
WO 2024/015880 A2

(51) International Patent Classification:

A61K 41/00 (2020.01) A61P 3/00 (2006.01)

(21) International Application Number:

PCT/US2023/070084

(22) International Filing Date:

12 July 2023 (12.07.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/388,580 12 July 2022 (12.07.2022) US
63/426,610 18 November 2022 (18.11.2022) US

(71) Applicant: RHYTHM PHARMACEUTICALS, INC.
[US/US]; 222 Berkeley Street, 12th Floor, Boston, MA
02116 (US).

(72) Inventors: SHAH, Bhavik, P.; 222 Berkeley Street, 12th
Floor, Boston, MA 02116 (US). KLEYN, Patrick, Willem;
222 Berkeley Street, 12th Floor, Boston, MA 02116 (US).
SCIMIA, Maria, Cecilia; 222 Berkeley Street, 12th Floor,
Boston, MA 02116 (US). MEEKER, David, Pell; 222
Berkeley Street, 12th Floor, Boston, MA 02116 (US).

(74) Agent: LARKIN, Angelyn; Lando & Anastasi, LLP, 60
State Street, 23rd Floor, Boston, MA 02109 (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).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii))

Published:

- without international search report and to be republished
upon receipt of that report (Rule 48.2(g))
- with sequence listing part of description (Rule 5.2(a))

WO 2024/015880 A2

(54) Title: METHODS FOR TREATING OBESITY WITH AN MC4R AGONIST

(57) Abstract: The disclosure is related to a method of treating a non-genetic obesity (e.g., hypothalamic obesity) in a subject using a melanocortin-4 receptor (MC4R) agonist.