



(51) International Patent Classification:

C07D 471/04 (2006.01) C12N 5/0789 (2010.01)
C07D 487/04 (2006.01) A61K 35/12 (2015.01)
C07D 519/00 (2006.01)

(21) International Application Number:

PCT/US2018/027265

(22) International Filing Date:

12 April 2018 (12.04.2018)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/484,692	12 April 2017 (12.04.2017)	US
62/613,382	03 January 2018 (03.01.2018)	US
62/625,896	02 February 2018 (02.02.2018)	US

(71) Applicant: MAGENTA THERAPEUTICS, INC.
[US/US]; 50 Hampshire Street, 8th Floor, Cambridge,
Massachusetts 02139 (US).

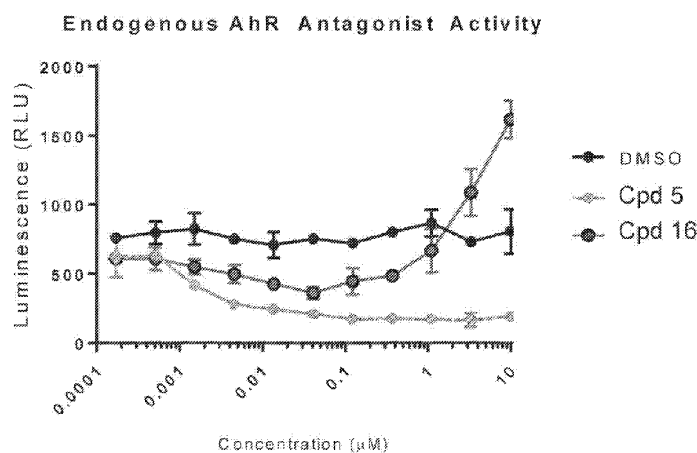
(72) Inventors: ROMERO, Arthur Glenn; 1201 Turn-
berry Ridge Ct., Chesterfield, Missouri 63005 (US).
GONCALVES, Kevin A.; 135 Clarendon Street, Apt. 14Z,
Boston, Massachusetts 02116 (US).

(74) Agent: ERLACHER, Heidi A. et al.; Cooley LLP, 1299
Pennsylvania Avenue, NW, Suite 700, Washington, District
of Columbia 20004 (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, IR, IS, 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,

(54) Title: ARYL HYDROCARBON RECEPTOR ANTAGONISTS AND USES THEREOF

FIG. 1



(57) **Abstract:** The disclosure relates to aryl hydrocarbon receptor antagonists, such as substituted imidazopyridines and imidazopyrazines, as well as methods of expanding hematopoietic stem cells by culturing hematopoietic stem or progenitor cells in the presence of these agents. Additionally, the disclosure provides methods of treating various pathologies in a patient by administration of expanded hematopoietic stem cells. The disclosure further provides methods of synthesizing aryl hydrocarbon receptor antagonists, such as substituted imidazopyridines and imidazopyrazines, as well as kits containing aryl hydrocarbon receptor antagonists that can be used for the expansion of hematopoietic stem cells.

[Continued on next page]

OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(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))