

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
05 December 2019 (05.12.2019)



(10) International Publication Number
WO 2019/232146 A1

(51) International Patent Classification:

A61K 31/19 (2006.01) A61K 45/00 (2006.01)
A61K 38/12 (2006.01) A61K 45/08 (2006.01)

(21) International Application Number:

PCT/US2019/034548

(22) International Filing Date:

30 May 2019 (30.05.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/679,386 01 June 2018 (01.06.2018) US

(71) Applicant: YALE UNIVERSITY [US/US]; Two Whitney Avenue, New Haven, Connecticut 06510 (US).

(72) Inventors: CHENG, YungChi; 961 Baldwin Road, Woodbridge, Connecticut 06525 (US). LAM, Wing; 470 Prospect Street, Apt. 38, New Haven, Connecticut 06511 (US).

JIANG, Zaoli; 20 Cedar Rock Road, Woodbridge, Connecticut 06525 (US).

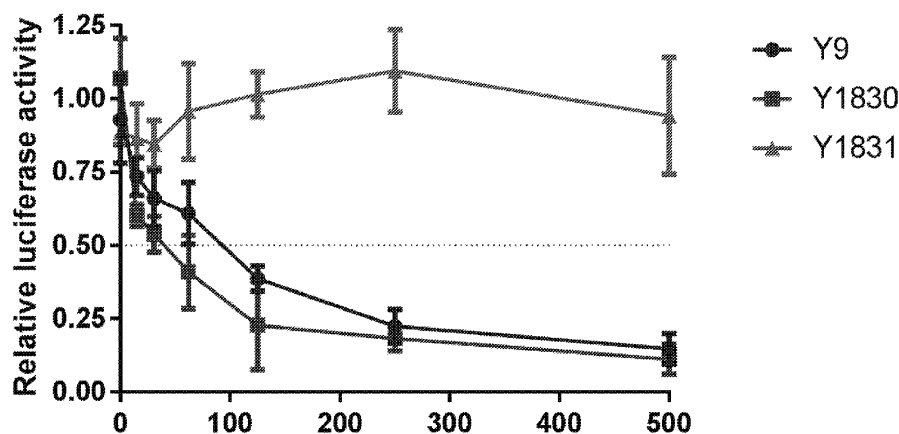
(74) Agent: DOYLE, Kathryn et al.; Saul Ewing Arnstein & Lehr LLP, 1500 Market Street, 38th Floor, Philadelphia, Pennsylvania 19102 (US).

(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, 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,

(54) Title: COMPOSITIONS AND METHODS FOR TREATING STEROID HORMONE-RELATED DISEASES OR DISORDERS

FIG. 1



(57) Abstract: The invention relates in one aspect to the unexpected discovery that herbal extracts of the Rubia cordifolia plant are potent inhibitors of a range of receptors, proteins and enzymes implicated in the pathology of a number of common diseases and disorders. In certain embodiments, the method is useful for treating at least one disease or disorder related to a steroid hormone receptor including prostate cancer, breast cancer, ovarian cancer, lung cancer, leukemia and lymphoma. In other embodiments, the method is useful for treating at least one disease or disorder related to the expression of at least one protein selected from the group consisting of Brd4, Brd2, cyclin D1, p53, Gata3 and CD47.

[Continued on next page]

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).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*

— *with sequence listing part of description (Rule 5.2(a))*