

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
04 January 2018 (04.01.2018)



(10) International Publication Number
WO 2018/005471 A1

- (51) **International Patent Classification:**
A01K 67/027 (2006.01) *A01K 67/02* (2006.01)
- (21) **International Application Number:**
PCT/US2017/039474
- (22) **International Filing Date:**
27 June 2017 (27.06.2017)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/355,102 27 June 2016 (27.06.2016) US
62/509,942 23 May 2017 (23.05.2017) US
- (71) **Applicant: BAYLOR COLLEGE OF MEDICINE**
[US/US]; 1 Baylor Plaza, Houston, Texas 77030 (US).
- (72) **Inventor: BISSIG, Karl-Dimitri;** c/o Baylor College of Medicine, 1 Baylor Plaza, Houston, Texas 77030 (US).
- (74) **Agent: PAVAO, Matthew 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, 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.

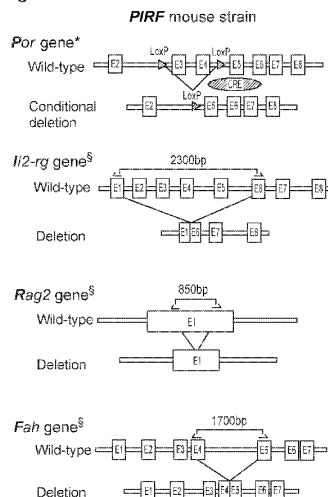
(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, 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))
- with sequence listing part of description (Rule 5.2(a))

(54) **Title:** HUMAN LIVER CHIMERIC NON-HUMAN ANIMAL WITH DEFICIENT P450 OXIDOREDUCTASE AND METHODS OF USING SAME

Figure 1A



*Embryonic stem cell targeting (See, Figure 4)
§ Zygote injection with Cas9 and gRNA (See, Figure 5)

(57) **Abstract:** The present disclosure provides a chimeric non-human animal comprising human hepatocytes, methods for preparing the chimeric non-human animal comprising human hepatocytes and methods of utilizing the chimeric non-human animal comprising human hepatocytes to screening and identifying metabolites for any type of drugs, typically small molecule drugs, which might affect human liver functions and any other bodily function.

WO 2018/005471 A1