

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
23 December 2021 (23.12.2021)



(10) International Publication Number
WO 2021/257886 A1

(51) International Patent Classification:
A61K 9/50 (2006.01) *A61K 31/00* (2006.01)

(21) International Application Number:
PCT/US2021/037909

(22) International Filing Date:
17 June 2021 (17.06.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/040,780 18 June 2020 (18.06.2020) US
63/059,514 31 July 2020 (31.07.2020) US

(71) Applicant: **XWPHARMA LTD.**; P. O. Box 31119 Grand Pavilion, Hibiscus Way, 802 West Bay Road, Grand Cayman (KY).

(72) Inventor; and

(71) Applicant: **XIANG, William, W.** [US/US]; 45168 Tom Blalock Street # 103, Fremont, CA 94539 (US).

(72) Inventors: **KARABORNI, Sami**; 10152 Firewood Drive, Cupertino, CA 95014 (US). **CANAFAX, Daniel, M.**;

409 Burning Tree Court, Half Moon Bay, CA 94019 (US). **XIANG, Jia-Ning**; 45168 Tom Blalock Street #103, Fremont, CA 94539 (US). **TIEN, James**; 57 Nanshun 4th Street, Luzhu District, Taoyuan, 338 (TW).

(74) Agent: **LAMBERT, William, R.**; Sheppard Mullin Richter & Hampton LLP, 379 Lytton Ave., Palo Alto, CA 94301 (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, IT, 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, 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, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,

(54) Title: CONTROLLED RELEASE GRANULATIONS OF WATER-SOLUBLE ACTIVE PHARMACEUTICAL INGREDIENTS

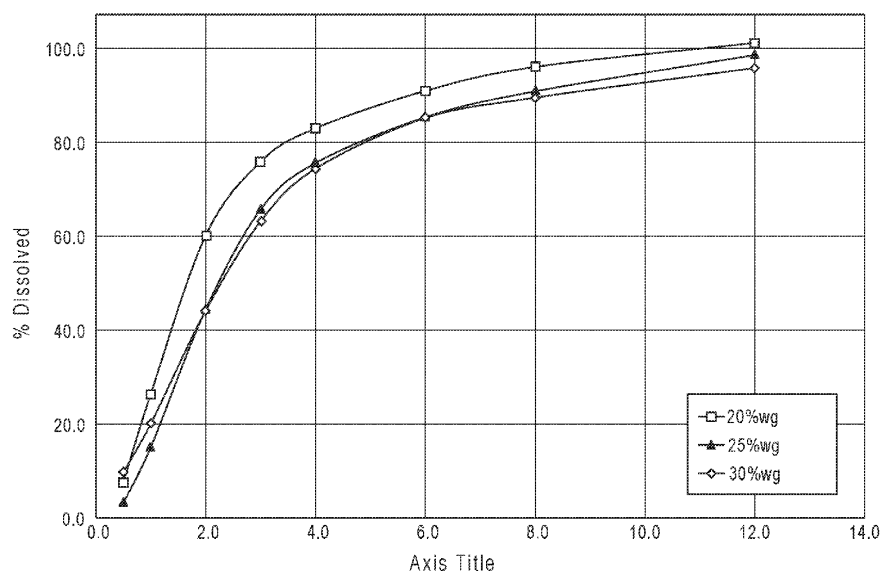


FIG. 22

(57) Abstract: Pharmaceutical granulations having a functional coating surrounding a core containing a water-soluble active pharmaceutical ingredient are disclosed. The functional coating provides for immediate release or controlled release of the active pharmaceutical ingredient. The pharmaceutical granulations can be used in oral pharmaceutical compositions.

[Continued on next page]

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))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*