



(51) International Patent Classification:

B01L 3/00 (2006.01) **C12M 1/32** (2006.01)
C12M 1/00 (2006.01)

(21) International Application Number:

PCT/US2021/054411

(22) International Filing Date:

11 October 2021 (11.10.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/219,697 08 July 2021 (08.07.2021) US

(71) Applicant: **OUROTECH, INC.** [US/US]; 3500 South DuPont Highway, Dover, Delaware 19901 (US).

(72) Inventors: **RANATUNGA, Duleeka Nimantha Bandara**; 3500 South DuPont Highway, Dover, Delaware 19901 (US). **PEERANI, Eleonora**; 3500 South DuPont Highway, Dover, Delaware 19901 (US). **PRIMO, Gastón Agustín**; 3500 South DuPont Highway, Dover, Delaware

19901 (US). **LIN, Zhi Yuan**; 3500 South DuPont Highway, Dover, Delaware 19901 (US). **HU, Sacha**; 3500 South DuPont Highway, Dover, Delaware 19901 (US). **CRAWLEY, Aston Martin**; 3500 South DuPont Highway, Dover, Delaware 19901 (US).

(74) Agent: **CORNELIO, Gina N.** et al.; Dorsey & Whitney LLP, 1400 Wewatta Street, Suite 400, Denver, Colorado 80202 (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.

(54) Title: TREATMENT EFFICACY PREDICTION SYSTEMS AND METHODS

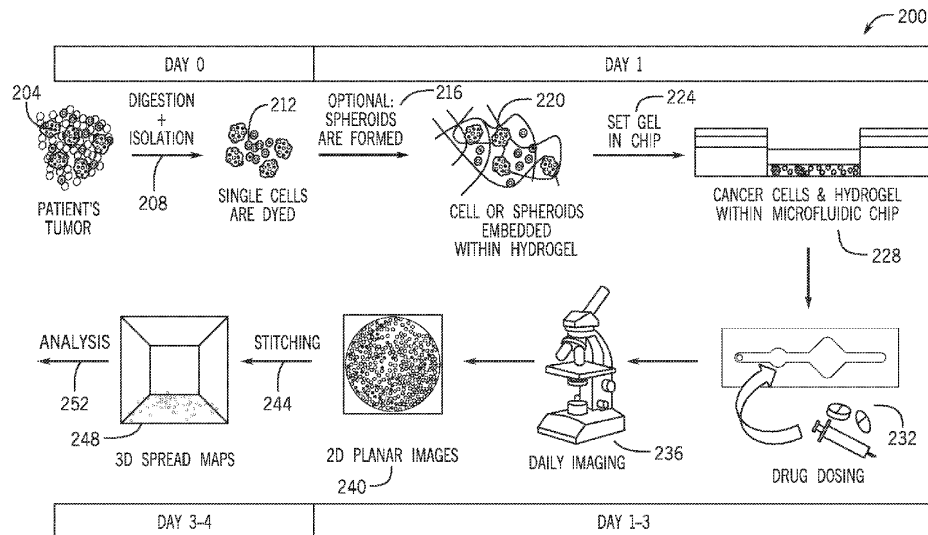


FIG. 2

(57) Abstract: Systems and methods for predicting a patient response to various agents and/or combinations of agents using *ex vivo* dosing and imaging are disclosed. In one example, a method of determining treatment efficacy includes analyzing a solid cell culture over time, e.g., first and second responses to a solid cell culture to respective treatments may be compared to determine a treatment efficacy of each treatment. Systems and methods for applying the treatments to the cell culture and analyzing the cell culture and efficacy are disclosed.

[Continued on next page]

(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).

Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *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:

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