



(51) International Patent Classification:

C12Q 1/02 (2006.01) C12Q 1/70 (2006.01)
C12Q 1/68 (2006.01)

(21) International Application Number:

PCT/US2015/059344

(22) International Filing Date:

5 November 2015 (05.11.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/075,648 5 November 2014 (05.11.2014) US

(71) Applicants: CALIFORNIA INSTITUTE OF TECHNOLOGY [US/US]; 1200 East California Boulevard, M/C 210-85, Pasadena, CA 91125 (US). SLIPCHIP CORPORATION [US/US]; 118 N. Clinton Street, Suite 205, Chicago, IL 60661 (US).

(72) Inventors: ISMAGILOV, Rustem; c/o CALIFORNIA INSTITUTE OF TECHNOLOGY, 1200 East California Boulevard, M/C 210-85, Pasadena, CA 91125 (US). KHOROSHEVA, Eugenia; c/o CALIFORNIA INSTITUTE OF TECHNOLOGY, 1200 East California

Boulevard, M/C 210-85, Pasadena, CA 91125 (US). SCHLAPPI, Travis; c/o CALIFORNIA INSTITUTE OF TECHNOLOGY, 1200 East California Boulevard, M/C 210-85, Pasadena, CA 91125 (US). CURTIS, Matthew, S.; c/o CALIFORNIA INSTITUTE OF TECHNOLOGY, 1200 East California Boulevard, M/C 210-85, Pasadena, CA 91125 (US). SCHOEPP, Nathan; c/o CALIFORNIA INSTITUTE OF TECHNOLOGY, 1200 East California Boulevard, M/C 210-85, Pasadena, CA 91125 (US). MAAMAR, Hedia; c/o SLIPCHIP CORPORATION, 118 N. Clinton Street, Suite 205, Chicago, IL 60661 (US). SHEN, Feng; c/o SLIPCHIP CORPORATION, 118 N. Clinton Street, Suite 205, Chicago, IL 60661 (US). JUE, Erik, B.; c/o CALIFORNIA INSTITUTE OF TECHNOLOGY, 1200 East California Boulevard, M/c 210-85, Pasadena, CA 91125 (US).

(74) Agents: SHUSTER, Michael, J. et al.; Fenwick & West LLP, Silicon Valley Center, 801 California Street, Mountain View, CA 94041 (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, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

[Continued on next page]

(54) Title: MICROFLUIDIC MEASUREMENTS OF THE RESPONSE OF AN ORGANISM TO A DRUG

(57) Abstract: Disclosed herein are methods and devices for rapid assessment of whether a microorganism present in a sample is susceptible or resistant to a treatment.

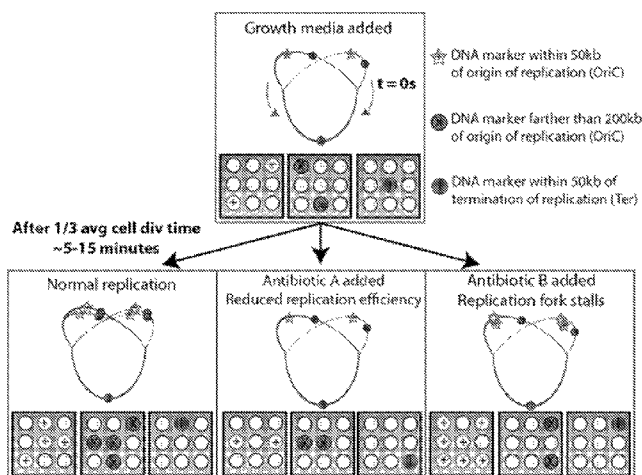


FIG. 4



HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, 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))
- 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))

(88) Date of publication of the international search report:

15 September 2016