

(43) International Publication Date
22 November 2012 (22.11.2012)

- (51) **International Patent Classification:**
G01N 33/58 (2006.01) *C12P 5/00* (2006.01)
- (21) **International Application Number:**
PCT/US2012/037351
- (22) **International Filing Date:**
10 May 2012 (10.05.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/486,211 13 May 2011 (13.05.2011) US
- (71) **Applicant (for all designated States except US):** AMYR-
IS, INC. [US/US]; 5885 Hollis Street, Suite 100,
Emeryville, CA 94608 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** UBERSAX, Jeff
[US/US]; 5885 Hollis Street, Suite 100, Emeryville, CA
94608 (US). FRENZ, Lucas [DE/US]; 5885 Hollis Street,
Suite 100, Emeryville, CA 94608 (US).
- (74) **Agents:** WANG, Stephanie, X. et al.; Squire Sanders (US)
LLP, 275 Battery Street, Suite 2600, San Francisco, CA
94111 (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, 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, HN,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, 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,
ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))

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))

(54) **Title:** METHODS AND COMPOSITIONS FOR DETECTING MICROBIAL PRODUCTION OF WATER-IMMISCIBLE COMPOUNDS

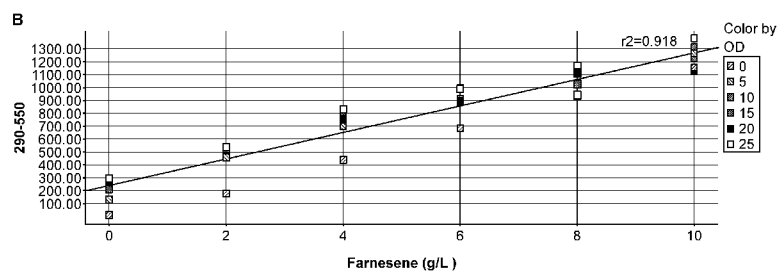


FIG. 4

(57) **Abstract:** Provided herein are methods and compositions useful for detecting the production of compounds in a cell, for example, a microbial cell genetically modified to produce one or more such compounds at greater yield and/or with increased persistence compared to a parent microbial cell that is not genetically modified. In some embodiments, the methods comprise contacting a solution with a fluorescent dye that directly binds the recombinantly produced compound, wherein the solution comprises a plurality of cells recombinantly producing the compound; and detecting the fluorescent dye under spectral conditions suitable for the selective detection of the fluorescent dye bound to the recombinantly produced compound.