

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 August 2007 (16.08.2007)

PCT

(10) International Publication Number
WO 2007/092571 A3

- (51) International Patent Classification:
C12Q 1/68 (2006.01) *C12N 5/00* (2006.01)
- (21) International Application Number:
PCT/US2007/003401
- (22) International Filing Date: 7 February 2007 (07.02.2007)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
- | | | |
|------------|-------------------------------|----|
| 60/771,349 | 7 February 2006 (07.02.2006) | US |
| 60/776,547 | 24 February 2006 (24.02.2006) | US |
| 60/778,860 | 3 March 2006 (03.03.2006) | US |
| 60/786,520 | 27 March 2006 (27.03.2006) | US |
| 60/799,213 | 9 May 2006 (09.05.2006) | US |
| 60/857,543 | 7 November 2006 (07.11.2006) | US |
- (71) Applicant (for all designated States except US): **WAFER-GEN, INC.** [US/US]; 46571 Fremont Boulevard, Fremont, CA 94538 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **JOSEPH, Victor**

[US/US]; 35964 Killorglin Common, Fremont, CA 94536 (US). **HUDA, Amjad** [US/US]; 420 Panorama Court, Fremont, CA 94539 (US). **ROGERS, Joseph, F.** [US/US]; 263 Waverly Street, #3, Sunnyvale, CA 94086 (US).

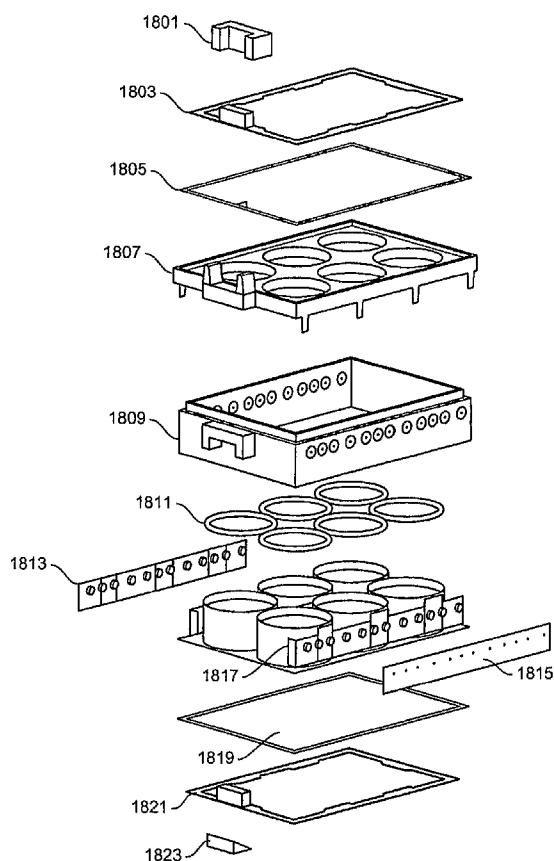
(74) Agents: **SHOOP, Rick** et al.; Morrison & Foerster LLP, 755 Page Mill Road, Palo Alto, CA 94304-1018 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, 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, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: TEMPERATURE-REGULATED CULTURE PLATES



(57) Abstract: Described herein are environmentally isolated tissue culture devices that may be used for cell culture, as well as systems including these devices and methods for using them. These devices may include control features for regulating the micro-environment within a well or wells of the device. For example, on-board features may regulate the temperature, humidity, pH, media level, media composition, CO₂/O₂/N₂ levels, drug concentration, cell density, byproduct (or product) production, and mixing of materials within the chamber. Material may be added to or withdrawn from the wells of the device without opening the device. Also described herein are controllers for analyzing and controlling the micro-environment within the well. Thus, the plates described herein may be used without requiring a separate incubator, allowing cells to be analyzed (e.g., imaged) continuously, allowing real-time reactions while monitoring under a microscope for hours, days or even weeks.



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
27 December 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.