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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 December 2008 (04.12.2008)

PCT

(10) International Publication Number
WO 2008/147899 A1

(51) International Patent Classification:
C12Q 1/68 (2006.01)

(21) International Application Number:
PCT/US2008/064561

(22) International Filing Date: 22 May 2008 (22.05.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/939,826 23 May 2007 (23.05.2007) US

(71) Applicant *(for all designated States except US)*: **OREGON HEALTH & SCIENCE UNIVERSITY** [US/US]; Office Of Technology & Research Collaborations, 2525 Sw First Avenue, Suite #120, Portland, OR 97201 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **YE, Zheng** [CA/US]; 15304 Nw Twoponds Drive, Portland, OR 97229 (US). **MATHERS, William** [US/US]; 717 8th Street, Lake Oswego, OR 97034 (US).

(74) Agent: **GRISWOLD, Ian, J.**; Klarquist Sparkman, Llp, One World Trade Center, Suite 1600, 121 Sw Salmon Street, Portland, OR 97204 (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, 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, 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.

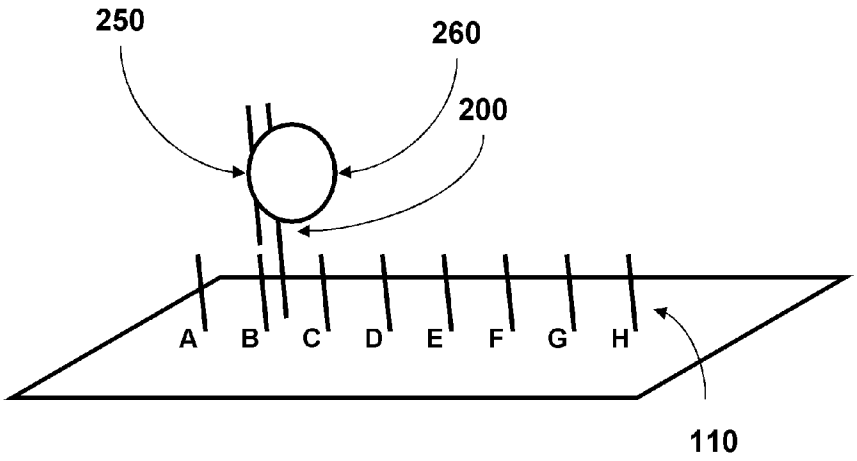
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*
— *with sequence listing part of description published separately in electronic form and available upon request from the International Bureau*

(54) Title: MICROARRAY SYSTEMS AND METHODS FOR IDENTIFYING DNA-BINDING PROTEINS

Fig. 3C



(57) Abstract: Disclosed are methods for identifying double-stranded nucleic acid protein binding sites and double-stranded nucleic acid binding proteins. The method can include contacting a sample with at least one partially double-stranded nucleic acid probe under conditions that permit binding of double-stranded binding proteins and partially double-stranded nucleic acid probes. In particular examples, the partially double-stranded nucleic acid probes include a first portion of single-stranded nucleic acid at least about 15 nucleotides in length with a unique index sequence and a second portion of double-stranded nucleic acid greater than about 8 base pairs in length with a potential binding site for a double-stranded nucleic acid binding protein. The protein bound partially double-stranded nucleic acid probe can then be isolated and detected by hybridization to a nucleic acid indexing probe. Also disclosed are kits and devices for carrying out the methods.

WO 2008/147899 A1