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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 February 2004 (12.02.2004)

PCT

(10) International Publication Number
WO 2004/013608 A3

(51) International Patent Classification[7]: G01N 33/48

(21) International Application Number:
PCT/US2003/024524

(22) International Filing Date: 4 August 2003 (04.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/400,911 2 August 2002 (02.08.2002) US

(71) Applicant *(for all designated States except US)*: **RUSH-PRESBYTERIAN-ST. LUKE'S MEDICAL CENTER** [US/US]; c/o Ms. Tracy Lucente, 1700 West Van Buren Street, Suite 470, Rush Intellectual Property Office, Chicago, IL 60612-3244 (US).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: **FATHALLAH-SHAYKH, Hassan, M.** [US/US]; 5020 South Lake Shore Drive, Apt. 3501, Chicago, IL 60612 (US).

(74) Agents: **MANNING, Michelle** et al.; Foley & Lardner, P.O. Box 1497, Madison WI 53701-1497 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (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:
30 September 2004

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.

(54) Title: METHODS FOR ELIMINATING FALSE DATA FROM COMPARATIVE DATA MATRICES AND FOR QUANTIFYING DATA MATRIX QUALITY

(57) Abstract: This invention provides methods for eliminating false data from a comparative analysis of analytical data matrices, such as gene expression microarrays. The invention also provides methods for quantifying the quality of data provided by such comparative assays.

WO 2004/013608 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/24524

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01N 33/48

US CL : 702/19

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 702/19, 20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

medline, biosis, biotechds, caplus, embase, USPAT, EPO, JPO, DERWENT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	TUSHER et al. Significance Analysis of Microarrays Applied to the Ionizing Radiation Response. PNAS, 24 April 2001, Vol. 98, No. 9, pages 5116-5121.	1
Y	NEWTON et al. On Differential Variability of Expression Ratio: Improving Statistical Inference about Gene Expression Changes from Microarray Data . Journal of Computational Biology, 2001, Vol. 8, No. 1, pages 37-52.	1
A	ALTER et al. Singular Value Decomposition for Genome-wide Expression Data Processing and Modeling. PNAS, August 2000, Vol. 97, No.18, pages 10101-10106.	1-35
A	BAGGERLY et al. Identifying Differentially Expressed Genes in cDNA Microarray Experiments. Journal of Computational Biology, 2001, Vol. 8, No.6, pages 639-659.	1-35
A,E	US 6,636,646 B1 (GINDELE) 21 October 2003 (21.10.2003), columns 3-21.	1-35

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
09 June 2004 (09.06.2004)	27 AUG 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Shubo "Joe" Zhou Telephone No. (703)-308-0196

Janice Ford for

Form PCT/ISA/210 (second sheet) (July 1998)