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61/362,676 8 July 2010 (08.07.2010) US(71) Applicant (for all designated States except US): **PRIME GENOMICS, INC.** [US/US]; 111 Commonwealth, San Francisco, CA 941 18 (US).

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[Continued on next page]

(54) Title: SYSTEM FOR THE QUANTIFICATION OF SYSTEM- WIDE DYNAMICS IN COMPLEX NETWORKS

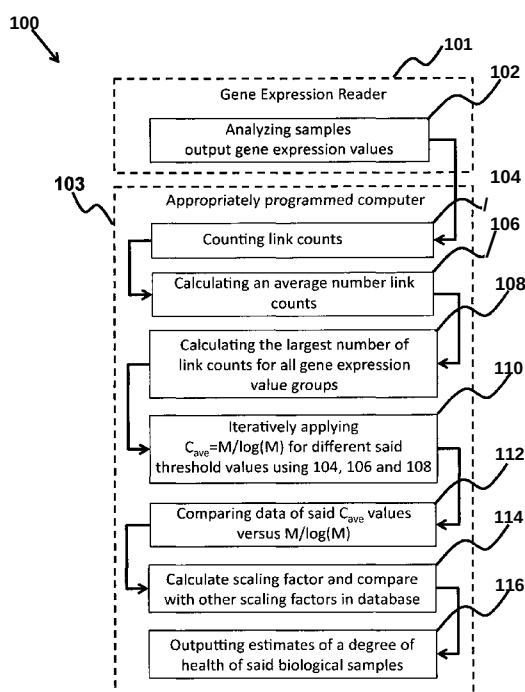
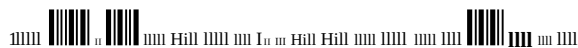


FIG. 1

(57) Abstract: A device, method and system are provided for diagnosing a disease using a gene expression reader to analyze biological samples and output gene expression values to calculate a scaling factor using a computer by counting a number of link counts C_a for groups of an individual genes' expression values at different times at a threshold value C or for groups of genes' expression values at a single time at the threshold value C , calculating an average number C_{ave} of the link counts C_a , calculating a largest number M of the C_a , iteratively applying a relation $C_{ave} = M/\log(M)$ for different threshold values C , comparing data of the C_{ave} values versus $M/\log(M)$, and calculating a fitting to the compared data to output the scaling factor a . The scaling factor a is compared with other scaling factors a' in a database to output a report of estimates for a degree of health.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US201 1/001 184**A. CLASSIFICATION OF SUBJECT MATTER****G06F 19/10(2011.01)i**

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)

G06F 19/10; G06G 7/48; G01N 33/563; G06F; C12Q 1/68

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: "disease*", "health*", "estimat*,diagno*", "gene*", "regress*"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2009-064901 A2 (VERIDEX LLC) 22 May 2009 See the abstract; claim 1; and figure 2B.	1-21
A	US 2008-0064118 A1 (RICHARD PORWANCHER) 13 March 2008 See the abstract; claim 1; and figure 3.	1-21
A	WO 99-41653 A2 (IAMETER INCORPORATED) 19 August 1999 See the abstract; claim 1; and figure 2.	1-21
A	KR 10-2007-0065869 A (THE REGENTS OF THE UNIVERSITY OF CALIFORNIA) 25 June 2007 See the abstract; claims 1-6; and figure 6.	1-21

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

* Special categories of cited documents:

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"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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2011/001184

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