Abstract: Methods and formulations for diagnosing oncological disorders in humans using epimetabolic shifters, multidimensional intracellular molecules or environmental influencers are described.
— 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))
A. CLASSIFICATION OF SUBJECT MATTER

C12Q 1/68(2006.01)i, C40B 40/08(2006.01)i, G01N 33/68(2006.01)i, G01N 33/57(2006.01)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)

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)
NCBI PubMed, eKOMPASS (KIPO internal), "oncological disorder, leukemia, lymphoma, biomarker, expression profile, diagnosis, etc."

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Okumura et al., &quot;Identification of biomarkers in ductal carcinoma in situ of the breast with microinvasion&quot; Br J Cancer, Vol. 8: 287, 6 Oct 2008 - see the whole document, especially Abstract: Figure 1: Tables 4-6.</td>
<td>49-58</td>
</tr>
</tbody>
</table>

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

Date of the actual completion of the international search 14 JANUARY 2011 (14.01.2011)

Date of mailing of the international search report 17 JANUARY 2011 (17.01.2011)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office Government Complex-Deajeon, 139 Seomsa-ro, Seo-gu, Deajeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Lee, Jun Hyuk

Telephone No. 82-42-481-8115

Form PCT/ISA/210 (second sheet) (July 2009)
INTERNATIONAL SEARCH REPORT

Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-48, 64, 65
   because they relate to subject matter not required to be searched by this Authority, namely:
   See an Extra sheet.

2. ☒ Claims Nos.: 22, 23, 25, 28, 31, 32, 43
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
   The subject matter of claims 22, 23, 25, 28, 31, 32 and 43 is so unclear and indefinite that no meaningful search could be made because these claims are drafted in reference to multiple dependent claims such as claims 20, 21, 24, 26, 27, 29, 30, 33-40, 42, 44-48 and 59-63 (see the category Box No. II:3 below).

   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invoice payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims, it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)
Continuation of Box No. II-1.

Claims 1-48, 64 and 65 are directed to a method of (i) assessing whether subject is afflicted with an oncological disorder; (ii) prognosing whether a subject is predisposed to developing an oncological disorder; (iii) prognosing the recurrence of an oncological disorder in a subject; (iv) prognosing the survival of a subject with an oncological disorder; (v) prognosing the aggressiveness on an oncological disorder in a subject; (vi) monitoring the progression of an oncological disorder in a subject; (vii) assessing the efficacy of a therapy for treating an oncological disorder in a subject; (viii) assessing the efficacy of an environmental influencer compound for treating an oncological disorder in a subject; (ix) identifying a compound for treating an oncological disorder in a subject; or (x) assessing whether subject is afflicted with a CoQ10 responsive state. The method is thus considered a diagnostic method falling into the category of methods for treatment of the human body by surgery or therapy as well as diagnostic methods [Article 17(2)(a)(i), Rule 39.1(iv) PCT].
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<tr>
<td>X</td>
<td>Rydberg et al., &quot;Toll-like receptor agonists induce inflammation and cell death in a model of head and neck squamous cell carcinomas&quot; Immunology, Vol. 1 28. No. 1 (Suppl), e600-611, 26 Dec 2008 - see the whole document, especially Abstract: Figure 3.</td>
<td>49-58</td>
</tr>
<tr>
<td>X</td>
<td>Li et al., &quot;Candidate genes responsible for human hepatocellular carcinoma identified from differentially expressed genes in hepatocarcinogenesis of the tree shrew (Tupaia belangeri chinesis)&quot; Hepatol Res. Vol. 38, No. 1, pp85-95, 20 Aug 2007 - see the whole document, especially Abstract: Figures 6-9; Tables 2-4.</td>
<td>49-58</td>
</tr>
<tr>
<td>Patent document cited in search report</td>
<td>Publication date</td>
<td>Patent family member(s)</td>
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Form PCT/ISA/210 (patent family annex) (July 2009)