This application relates to methods and tests that allow for the establishment of personalized weight-loss programs for a subject based upon the subject’s metabolic genotype in key metabolic genes. Kits and methods are disclosed for determining a subject’s metabolic genotype, which may be used to select an appropriate therapeutic/dietary regimen or lifestyle recommendation based upon the likelihood of a subject’s responsiveness to certain diets and activity levels. Such a personalized weight-loss program will have obvious benefits (e.g., yield better results in terms of weight loss and weight maintenance) over traditional weight-loss programs that do not take into account genetic information.
INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/057195

A. CLASSIFICATION OF SUBJECT MATTER

C12Q I/68(2006.01), C12N 15/12(2006.01), C40B 40/08(2006.01)

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 I/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 database consulted during the international search (name of database and, where practical, search terms used)
NCBI PubMed, eKOMPASS (KIPO internal), 'rs7999883, rs801282, rs042714, rs042713, rs4994, diet, metabolic genotyping, etc'

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>X</td>
<td>MATSUO, T. et al., 'PPARγ genotype accounts for part of individual variation in body weight reduction in response to calorie restriction', Obesity (Silver Spring), October 2009, Vol. 17, No. 10, pp1924-1931 (Epub 18 June 2009)</td>
<td>1,6</td>
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<td>- see the whole document, especially Abstract; Tables 2-3.</td>
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<td>JALBA, M. S. et al., 'Association of Codon 16 and Codon 27 beta2-Adrenergic Receptor Gene Polymorphisms with Obesity: A Meta-analysis', Obesity (Silver Spring), September 2008, Vol. 16, No. 9, pp2096-2106 (Epub 10 July 2008)</td>
<td>1,4,6,8</td>
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<td>- see the whole document, especially Abstract; Pages 2097, 2099, 2103.</td>
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<td>YAMADA, T. et al., 'Association of genetic variants with atherothrombotic cerebrovascular infarction in Japanese individuals with metabolic syndrome', International Journal of Molecular Medicine, June 2008, Vol. 21, No. 6, pp801-808 - see the whole document, especially Abstract; Tables 2-6.</td>
<td>2,5</td>
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*: 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 but 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 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

X: 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

Y: 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

*: "&" document member of the same patent family

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

Date of the actual completion of the international search
20 SEPTEMBER 2011 (20.09.2011)

Date of mailing of the international search report
21 SEPTEMBER 2011 (21.09.2011)

Name and mailing address of the ISA/KR
Korean Intellectual Property Office
Government Complex-Daejeon, 189 Choongsan-ro, Seo-gu, Daejeon 302-701, Republic of Korea
Facsimile No. 82-42-472-7140

Authorized officer
Lee, Jun Hyuk
Telephone No. 82-42-481-815
**INTERNATIONAL SEARCH REPORT**

**Box No. II  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.: because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.: 7, 9 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:
   
   Claims 7 and 9 comprise 'a means for classifying the subject into a nutrition category'. However, which means may fall within this scope is so unclear that the subject-matter for which protection is not clearly defined, and no meaningful search can be carried out for claims 7 and 9.

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

**Box No. III  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 invite 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)
**INTERNATIONAL SEARCH REPORT**

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<td>A</td>
<td>US 2007/0112177 A1 (UTHURALT, J., et al.) 2007.05.17 - see the whole document, especially Example 3.</td>
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Form PCT/ISA/210 (continuation of second sheet) (My 2009)
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<td>US 2007-01 12 A1</td>
<td>17.05.2007</td>
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