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(54) **MESOTHELIOMA BIOMARKERS AND USES THEREOF**

(57) The present disclosure includes biomarkers, methods, devices, reagents, systems, and kits for the detection and diagnosis of cancer generally and mesothelioma specifically. In one aspect, the disclosure provides biomarkers that can be used alone or in various combinations to diagnose cancer generally or mesothelioma specifically. In another aspect, methods are provided for diagnosing mesothelioma in an individual, where the methods include detecting, in a biological sample from an individual, at least one biomarker value corresponding to at least one biomarker selected from the group of biomarkers provided in Table 1, wherein the individual is classified as having mesothelioma, or the likelihood of the individual having mesothelioma is determined, based on the at least one biomarker value. In a further aspect, methods are provided for diagnosing cancer generally in an individual, where the methods include detecting, in a biological sample from an individual, at least one biomarker value corresponding to at least one biomarker selected from the group of biomarkers provided in Table 19, wherein the individual is classified as having cancer generally, or the likelihood of the individual having cancer is determined, based on the at least one

biomarker value.

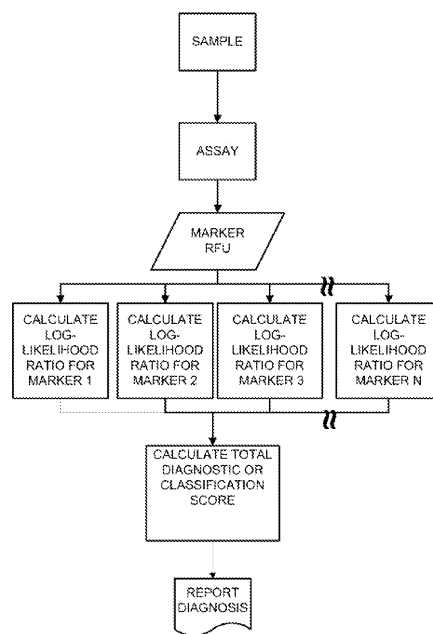


FIG. 1B

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

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Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

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No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

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see sheet B

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All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

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As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

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Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

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None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

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1-19 (partially)

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The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



LACK OF UNITY OF INVENTION
SHEET B

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

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1. claims: 1-19(partially)

Method of diagnosis of mesothelioma using a combination of at least one protein biomarker from table 18 with at least one additional marker from table 1, whereby the at least one protein biomarker is F9.

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2-10. claims: 1-19(partially)

Method of diagnosis of mesothelioma using a combination of at least one protein biomarker from table 18 with at least one additional marker from table 1, whereby the at least one protein biomarker is one of the other markers in table 18

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| US 2009104617 A1 | 23-04-2009 | US 2003219760 A1 | 27-11-2003 |
| | | US 2009104617 A1 | 23-04-2009 |
| | | US 2011059854 A1 | 10-03-2011 |
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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|----------------|---|---------|------------|
| 专利名称(译) | 间皮瘤生物标志物及其用途 | | |
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| 优先权 | 61/386840 2010-09-27 US 61/470143 2011-03-31 US PCT/US2011/053377 2011-09-27 WO | | |
| 其他公开文献 | EP3029153B1 EP3029153A2 | | |
| 外部链接 | Espacenet | | |

摘要(译)

本公开内容包括用于一般地检测和诊断癌症和特别是间皮瘤的生物标志物，方法，装置，试剂，系统和试剂盒。在一个方面，本公开内容提供了可以单独使用或以各种组合使用的生物标志物，以特异性地诊断癌症或间皮瘤。另一方面，提供了用于诊断个体间皮瘤的方法，其中所述方法包括在来自个体的生物样品中检测对应于选自表1中提供的生物标志物组的至少一种生物标志物的至少一种生物标志物值，其中，基于至少一种生物标志物值，将个体分类为具有间皮瘤，或确定个体患有间皮瘤的可能性。在另一方面，提供了通常在个体中诊断癌症的方法，其中所述方法包括在来自个体的生物样品中检测对应于选自表中提供的生物标志物组的至少一种生物标志物的至少一种生物标志物值。参照图19，其中基于至少一种生物标记值，将个体一般分类为患有癌症，或确定患有癌症的个体的可能性。

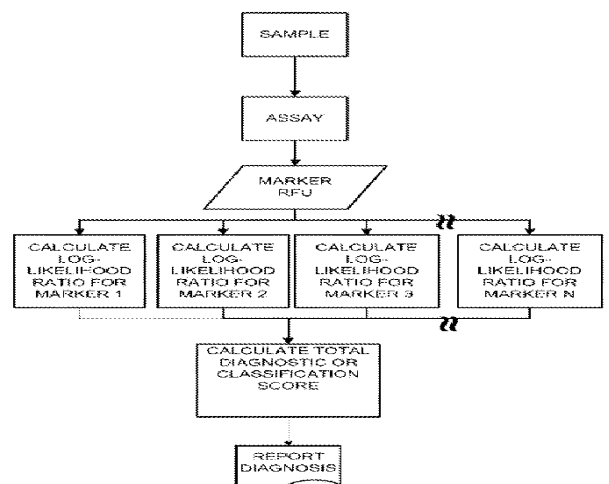


FIG. 1B