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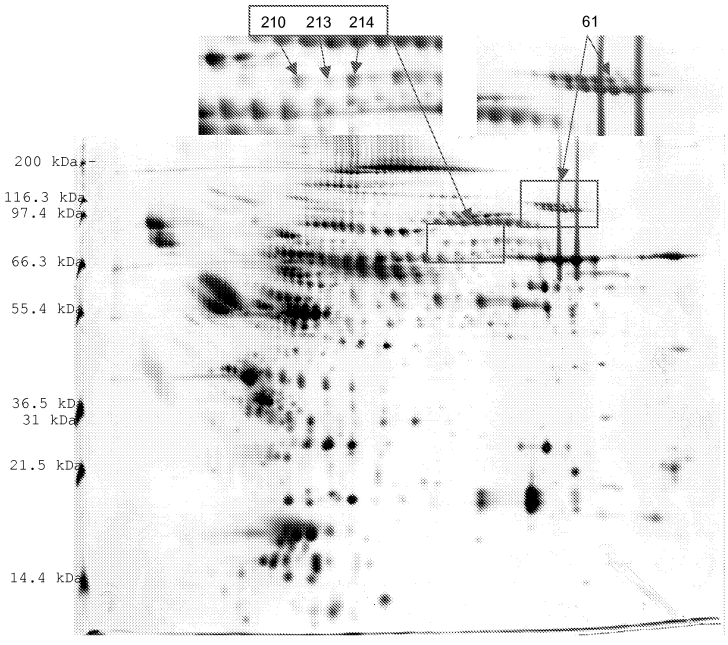
(54) Markers of renal transplant rejection and renal damage

(57) The present invention relates to methods of detecting renal transplant rejection and other forms of renal damage. Protein markers or renal damage are provided, along with assays for detecting said markers. Also provided are methods for identifying markers of renal damage.

FIG. 2



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EUROPEAN SEARCH REPORT

Application Number
EP 11 15 5053

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2003/003588 A1 (COMPER WAYNE D [AU]) 2 January 2003 (2003-01-02) * abstract; claims 1-13 *	1-20	INV. C12Q1/68 G01N33/53 G01N33/68
A	US 4 731 326 A (THOMPSON RUSSELL E [US] ET AL) 15 March 1988 (1988-03-15) * abstract; claims *	1-20	
A	CHAKRABORTY JOANA ET AL: "Tamm-Horsfall protein in patients with kidney damage and diabetes.", UROLOGICAL RESEARCH MAY 2004, vol. 32, no. 2, May 2004 (2004-05), pages 79-83, XP002467281, ISSN: 0300-5623 * pages 79-80, - page 82 *	1-20	
X	TROF RONALD J ET AL: "Biomarkers of acute renal injury and renal failure", SHOCK (PHILADELPHIA): INJURY, INFLAMMATION, AND SEPSIS: LABORATORY AND CLINICAL APPROACHES, LIPPINCOTT WILLIAMS & WILKINS, US, vol. 26, no. 3, 1 September 2006 (2006-09-01), pages 245-253, XP009122654, ISSN: 1073-2322 * page 245; table 2 *	1-20	TECHNICAL FIELDS SEARCHED (IPC) C12Q G01N
X	HONG C Y ET AL: "Markers of diabetic nephropathy.", JOURNAL OF DIABETES AND ITS COMPLICATIONS 1998 JAN-FEB LNKD- PUBMED:9442815, vol. 12, no. 1, January 1998 (1998-01), pages 43-60, XP002633600, ISSN: 1056-8727 * page 54 - page 55; table 1 *	1-20	

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~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
Munich	19 April 2011	Gonçalves Mauger, M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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EPO FORM 1503 03.82 (P04C01)

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EUROPEAN SEARCH REPORT

Application Number
EP 11 15 5053

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 2004/088276 A2 (CHILDRENS HOSP MEDICAL CENTER [US]; UNIV COLUMBIA [US]; DEVARAJAN PRAS) 14 October 2004 (2004-10-14) * abstract; claims; examples *	1-20	
A	VOSHOL HANS ET AL: "Evaluation of biomarker discovery approaches to detect protein biomarkers of acute renal allograft rejection", JOURNAL OF PROTEOME RESEARCH, ACS, WASHINGTON, DC, US, vol. 4, no. 4, 1 July 2005 (2005-07-01), pages 1192-1199, XP002520052, ISSN: 1535-3893, DOI: DOI:10.1021/PR050060+ * page 1193 - page 1197; figures 2,5 *	1-20	
A	CLARKE W ET AL: "CHARACTERIZATION OF RENAL ALLOGRAFT REJECTION BY URINARY PROTEOMIC ANALYSIS", ANNALS OF SURGERY, J.B. LIPPINCOTT COMPANY, PHILADELPHIA, US, vol. 237, no. 5, 1 May 2003 (2003-05-01), pages 660-665, XP009066802, ISSN: 0003-4932, DOI: DOI:10.1097/00000658-200305000-00008 * page 661 - page 663 *	1-20	TECHNICAL FIELDS SEARCHED (IPC)

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
Munich	19 April 2011	Gonçalves Mauger, M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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Application Number
EP 11 15 5053

CLAIMS INCURRING FEES

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

☐ 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):

☐ 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.

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:

see sheet B

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

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

☐ 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:

☒ 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:

1-18

☐ 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).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 11 15 5053

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:

1. claims: 1-18

Use of the presence or amount of a plurality of proteins, or a plurality of nucleic acids encoding said proteins, said proteins being selected from AMBP protein precursor (alpha1 -microglobulin), adiponectin, C4b-binding protein a-chain precursor, ceruloplasmin precursor, complement C3 precursor, complement component C9 precursor, complement factor D precursor, aiB - glycoprotein, a2 -glycoprotein I precursor, heparin cofactor II precursor, Ig p Chain C region protein, Leucine-rich a2 -glycoprotein precursor, pigment epithelium-derived factor precursor, plasma retinol-binding protein precursor, translation initiation factor 3 subunit 10, N-acetylmuramoyl-L-alanine amidase precursor; or a fragment thereof, or antibodies against said proteins, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

---

2. claims: 19-24(partially)

Use of the presence or amount of n-acetylmuranmoyl-L-alanine amidase percursor or a fragment thereof or antibodies against n-acetylmuranmoyl-L-alanine amidase percursor percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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3. claims: 19-24(partially)

Use of the presence or amount of adiponectin or a fragment thereof or antibodies against adiponectin as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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4. claims: 19-24(partially)

Use of the presence or amount of AMBP protein percursor or a fragment thereof or antibodies against AMBP protein percursor, as a marker for the diagnosisand/or prognosis of renal damage. Methods and kits therefor.

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5. claims: 19-24(partially)

Use of the presence or amount of C4b-binding protein alpha chain percursor or a fragment thereof or antibodies against C4b-binding protein alpha chain percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 11 15 5053

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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6. claims: 19-24(partially)

Use of the presence or amount of ceruloplasmin percursor or a fragment thereof or antibodies against ceruloplasmin percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

---

7. claims: 19-24(partially)

Use of the presence or amount of complemnt C3 percursor or a fragment thereof or antibodies against complement C3 percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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8. claims: 19-24(partially)

Use of the presence or amount of complement component C9 percursor or a fragment thereof or antibodies against complement component C9 percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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9. claims: 19-24(partially)

Use of the presence or amount of complement factor D percursor or a fragment thereof or antibodies against complement factor D percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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10. claims: 19-24(partially)

Use of the presence or amount of Beta 2 glycoprotein I percursor or a fragment thereof or antibodies against beta 2 glycoprotein I percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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11. claims: 19-24(partially)

Use of the presence or amount of heparin cofactor II percursor or a fragment thereof or antibodies against heparin cofactor II percursor, as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 11 15 5053

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:

12. claims: 19-24(partially)

Use of the presence or amount of Ig u chain C region protein or a fragment thereof or antibodies against Ig u chain C region protein as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

---

13. claims: 19-24(partially)

Use of the presence or amount of Leucine-rich alpha-2-glycoprotein percursor or a fragment thereof or antibodies against Leucine-rich alpha-2-glycoprotein percursor as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

---

14. claims: 19-24(partially)

Use of the presence or amount of pigment epithelium derived factor percursor or a fragment thereof or antibodies against pigment epithelium derived factor percursor as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

---

15. claims: 19-24(partially)

Use of the presence or amount of plasma retinol-binding protein percursor or a fragment thereof or antibodies against plasma retinol-binding protein percursor as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

---

16. claims: 19-24(partially)

Use of the presence or amount of translation initiation factor 3 subunit 10,or a fragment thereof or antibodies against "translation initiation factor 3 subunit 10" as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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17. claims: 19-24(partially)

Use of the presence or amount of alpha 1B glycoprotein or a fragment thereof or antibodies against alpha 1B glycoprotein as a marker for the diagnosis and/or prognosis of renal damage. Methods and kits therefor.

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 11 15 5053

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:

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 15 5053

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19-04-2011

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	肾移植排斥反应和肾损伤的标志物		
公开(公告)号	EP2333116A3	公开(公告)日	2011-10-12
申请号	EP2011155053	申请日	2007-09-05
[标]申请(专利权)人(译)	电泳有限公司		
申请(专利权)人(译)	ELECTROPHORETICS有限公司		
当前申请(专利权)人(译)	ELECTROPHORETICS有限公司		
[标]发明人	KIENLE STEFAN JOUBERT RICHARD		
发明人	KIENLE, STEFAN JOUBERT, RICHARD		
IPC分类号	C12Q1/68 G01N33/53 G01N33/68		
CPC分类号	G01N33/53 C12Q1/6883 C12Q2600/136 C12Q2600/158 G01N33/56911 G01N33/6893 G01N2800/245 G01N2800/347 Y10S436/811		
优先权	2006017429 2006-09-05 GB		
其他公开文献	EP2333116A2 EP2333116B1		
外部链接	Espacenet		

摘要(译)

本发明涉及检测肾移植排斥和其他形式的肾损伤的方法。提供蛋白质标记物或肾损伤，以及用于检测所述标记物的测定法。还提供了用于鉴定肾损伤标志物的方法。

FIG. 2