



(11) **EP 3 182 126 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**02.08.2017 Bulletin 2017/31**

(51) Int Cl.:  
**G01N 33/53 (2006.01) C12Q 1/00 (2006.01)**  
**G01N 33/68 (2006.01)**

(43) Date of publication A2:  
**21.06.2017 Bulletin 2017/25**

(21) Application number: **16186083.8**

(22) Date of filing: **13.06.2013**

(84) Designated Contracting States:  
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**

• **Genesis Theranostix Korlatolt Felelossegu Tarsasag**  
**7624 Pécs (HU)**

(30) Priority: **15.06.2012 HU P1200368**  
**10.09.2012 US 201261699193 P**

(72) Inventors:  
• **TARCA, Adi, L.**  
**Canton, MI 48188 (US)**  
• **THAN, Nándor**  
**Grosse Pointe, MI 48236-1616 (US)**  
• **JUHÁSZ, Gábor**  
**1117 Budapest (HU)**  
• **KÉKESI, Adrienna, Katalin**  
**1117 Budapest (HU)**  
• **MEIRI, Hamutal**  
**69121 Tel Aviv (IL)**  
• **PAPP, Zoltán**  
**1125 Budapest (HU)**  
• **ROMERO, Roberto**  
**Detroit, MI 48201 (US)**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:  
**13803743.7 / 2 861 989**

(27) Previously filed application:  
**13.06.2013 PCT/US2013/045709**

(71) Applicants:  
• **Wayne State University**  
**Detroit, MI 48202 (US)**  
• **Semmelweis University**  
**1085 Budapest (HU)**  
• **The United States of America, As Represented by the Secretary, Dept. of Health & Human Services**  
**Office of Technology Transfer**  
**Bethesda, MD 20892-7660 (US)**

(74) Representative: **Lengyel, Zsolt**  
**Danubia**  
**Patent & Law Office LLC**  
**Bajcsy-Zsilinszky út 16**  
**1051 Budapest (HU)**

(54) **BIOMARKER TEST FOR PREDICTION OR EARLY DETECTION OF PREECLAMPSIA AND/OR HELLP SYNDROME**

(57) Disclosed are specific biomarkers that allow for early testing of preeclampsia/HELLP syndrome. Thus, a method is provided predicting preeclampsia in a pregnant woman. Also disclosed is a kit comprising means for assaying a sample from a pregnant woman for the concentrations of the specific biomarkers.

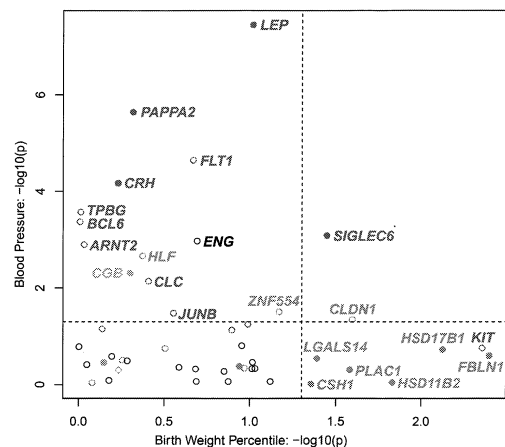


Figure 2C

**EP 3 182 126 A3**



EUROPEAN SEARCH REPORT

Application Number  
EP 16 18 6083

5

10

15

20

25

30

35

40

45

50

55

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 2006/097051 A1 (UNIV HONG KONG CHINESE [CN]) 21 September 2006 (2006-09-21) * claims 1 - 14, Examples 3 and 5 *	1-14	INV. G01N33/53 C12Q1/00 G01N33/68	
A	US 2010/016173 A1 (NAGALLA SRINIVASA R [US] ET AL) 21 January 2010 (2010-01-21) * par. 0037,0038, 0133; claims 1-21, 81; examples 2, 4; table 9 *	1-14		
A	T. VÁRKONYI ET AL: "Microarray Profiling Reveals That Placental Transcriptomes of Early-onset HELLP Syndrome and Preeclampsia Are Similar", PLACENTA, vol. 32, 1 February 2011 (2011-02-01), pages S21-S29, XP055217224, ISSN: 0143-4004, DOI: 10.1016/j.placenta.2010.04.014 * the whole document *	1-14		
A	US 2006/067937 A1 (KARUMANCHI S A [US] ET AL) 30 March 2006 (2006-03-30) * par. 0025 - 0027, 0035 - 0038, claims 55 - 93 *	1-14		TECHNICAL FIELDS SEARCHED (IPC)
E	WO 2014/160237 A2 (UNIV LELAND STANFORD JUNIOR [US]; RIKEN [JP]) 2 October 2014 (2014-10-02) * claims 1-18 *	1-14		G01N
A	WO 2010/085606 A1 (UNIV CASE WESTERN RESERVE [US]; GOBEZIE REUBEN [US]; LEE DAVID M [US]) 29 July 2010 (2010-07-29) * claim 17, par. 0077, 0085, 0086, 0097, 0098 *	14		
-----				
-The present search report has been drawn up for all claims				
Place of search <b>Munich</b>		Date of completion of the search <b>16 March 2017</b>	Examiner <b>Hoesel, Heidi</b>	
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				

EPO FORM 1503 03.02 (P04C01)



5

**CLAIMS INCURRING FEES**

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

10

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):

15

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.

20

**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:

25

see sheet B

30

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

35

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

40

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:

45

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:

50

1-14 (partially)

55

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  
EP 16 18 6083

5

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:

10

1. claims: 1-14(partially)

Method for the diagnosis of pre-eclampsia/HELLP syndrome by determining the level of at least three markers of the list given in claim 1, characterized in that the marker the panel comprises hornerin (S100A16, S100A18)r; kit suitable for carrying out the said method

15

---

20

2-12. claims: 1-14(partially)

Method for the diagnosis of pre-eclampsia/HELLP syndrome by determining the level of at least three markers of the list given in claim 1, characterized in that the marker the panel comprises (2) LGALS14, (3) CGB, ..., (12) PLAC-1; kit suitable for carrying out the said method.

25

---

30

35

40

45

50

55

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

EP 16 18 6083

5 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.

16-03-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006097051 A1	21-09-2006	AU 2006224973 A1	21-09-2006
		CA 2601735 A1	21-09-2006
		CA 2894337 A1	21-09-2006
		CN 101137761 A	05-03-2008
		CN 102010902 A	13-04-2011
		EP 1859051 A1	28-11-2007
		EP 2161347 A2	10-03-2010
		EP 2612927 A2	10-07-2013
		EP 2612928 A2	10-07-2013
		HK 1115169 A1	13-05-2011
		HK 1154407 A1	26-10-2012
		HK 1186756 A1	14-10-2016
		JP 5629051 B2	19-11-2014
		JP 5800471 B2	28-10-2015
		JP 2008524993 A	17-07-2008
		JP 2010213722 A	30-09-2010
		JP 2010268795 A	02-12-2010
		JP 2013150615 A	08-08-2013
		TW 200643175 A	16-12-2006
		US 2006252068 A1	09-11-2006
US 2010267034 A1	21-10-2010		
US 2015284800 A1	08-10-2015		
WO 2006097051 A1	21-09-2006		
-----			
US 2010016173 A1	21-01-2010	US 2010016173 A1	21-01-2010
		WO 2009097584 A1	06-08-2009
-----			
US 2006067937 A1	30-03-2006	AT 488251 T	15-12-2010
		AU 2005286626 A1	30-03-2006
		BR PI0515884 A	12-08-2008
		CA 2581336 A1	30-03-2006
		CN 101065667 A	31-10-2007
		DK 1804836 T3	24-01-2011
		EP 1804836 A2	11-07-2007
		EP 2347765 A1	27-07-2011
		HK 1107592 A1	30-06-2011
		HK 1160388 A1	30-05-2014
		JP 5270161 B2	21-08-2013
		JP 5715589 B2	07-05-2015
		JP 2008514631 A	08-05-2008
		JP 2012211131 A	01-11-2012
		JP 2015057426 A	26-03-2015
		KR 20070059174 A	11-06-2007
KR 20130119506 A	31-10-2013		
NI 200700081 A	13-05-2008		
SG 155257 A1	30-09-2009		

EPO FORM P0459

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

55

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

EP 16 18 6083

5 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.

16-03-2017

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		US 2006067937 A1	30-03-2006
		US 2011243956 A1	06-10-2011
		US 2017072018 A1	16-03-2017
		WO 2006034507 A2	30-03-2006
-----			
WO 2014160237 A2	02-10-2014	US 2016018413 A1	21-01-2016
		WO 2014160237 A2	02-10-2014
-----			
WO 2010085606 A1	29-07-2010	US 2012190042 A1	26-07-2012
		WO 2010085606 A1	29-07-2010
-----			

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)	用于预测或早期检测先兆子痫和/或HELLP综合征的生物标志物测试		
公开(公告)号	<a href="#">EP3182126A3</a>	公开(公告)日	2017-08-02
申请号	EP2016186083	申请日	2013-06-13
[标]申请(专利权)人(译)	韦恩州立大学 GENESIS THERANOSTIX KORLATOLT FELELOSSEGU TARSASAG		
申请(专利权)人(译)	韦恩州立大学 塞麦尔维斯大学 GENESIS THERANOSTIX KORLATOLT FELELOSSEGU TARSASAG		
当前申请(专利权)人(译)	韦恩州立大学 塞麦尔维斯大学 GENESIS THERANOSTIX KORLATOLT FELELOSSEGU TARSASAG		
[标]发明人	TARCA ADI L THAN NANDOR JUHASZ GABOR KEKESI AIENNA KATALIN MEIRI HAMUTAL PAPP ZOLTAN ROMERO ROBERTO		
发明人	TARCA, ADI, L. THAN, NÁNDOR JUHÁSZ, GÁBOR KÉKESI, ADRIENNA, KATALIN MEIRI, HAMUTAL PAPP, ZOLTÁN ROMERO, ROBERTO		
IPC分类号	G01N33/53 C12Q1/00 G01N33/68		
CPC分类号	G01N33/689 G01N2800/368 C12Q1/6883 G01N2800/50		
代理机构(译)	Lengyel的, 索尔特		
优先权	2012000368 2012-06-15 HU 61/699193 2012-09-10 US		
其他公开文献	EP3182126A2		
外部链接	<a href="#">Espacenet</a>		

#### 摘要(译)

公开了允许早期测试先兆子痫/HELLP综合征的特异性生物标志物。因此,提供了一种预测孕妇先兆子痫的方法。还公开了一种试剂盒,其包含用于测定来自孕妇的样品的特定生物标志物浓度的装置。

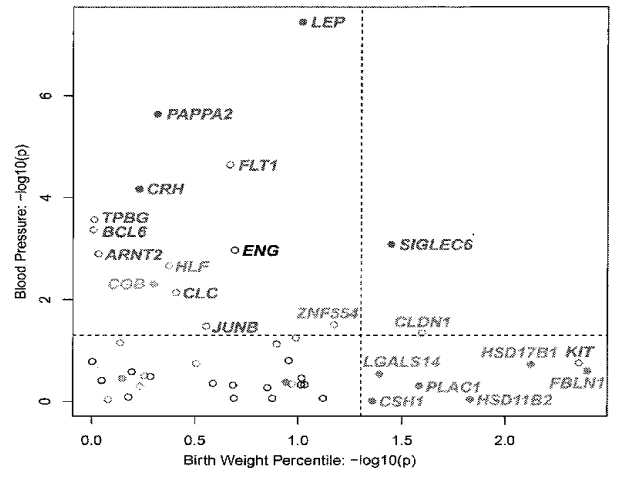


Figure 2C