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61/579,007 22 December 2011 (22.12.2011) US(71) Applicant (for all designated States except US): **CHILDREN'S MEDICAL CENTER CORPORATION**
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,

DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- 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))

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(54) Title: DIAGNOSTIC MARKERS AND THERAPEUTIC TARGETS OF KAWASAKI DISEASE

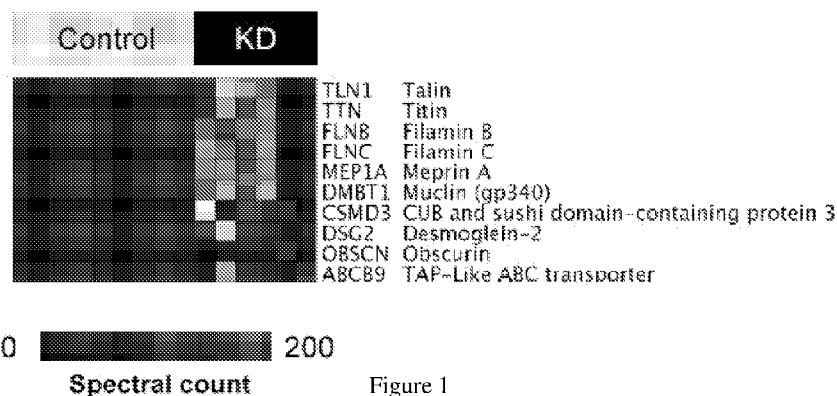


Figure 1

(57) Abstract: The present invention provides for compositions and methods for diagnosing and treating Kawasaki disease. More specifically, the proteomes of patients with KD are enriched for the meprin A, filamin B, and filamin C, which serve as biomarkers (and potential therapeutic targets) for KD. Accordingly, detection of these biomarkers, using compositions and methods provided for herein, can inform the therapy delivered to the subject.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/033514

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01N33/68
ADD.

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)
G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	RYOTA EBATA ET AL: "Increased Production of Vascular Endothelial Growth Factor-D and Lymphangiogenesis in Acute Kawasaki Disease", CIRCULATION JOURNAL, vol. 75, no. 6, 1 January 2011 (2011-01-01), pages 1455-1462, XP055037569, ISSN: 1346-9843, DOI: 10.1253/circj.CJ-10-0897 whole doc, in particular abstract and p. 1460-1461.; the whole document ----- -/-	1-21



Further documents are listed in the continuation of Box C.



See patent family annex.

* 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 another 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

"T" 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

"X" 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

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

14 September 2012

Date of mailing of the international search report

04/01/2013

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/033514

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KAZUNARI KANEKO ET AL: "Prediction of the Risk of Coronary Arterial Lesions in Kawasaki Disease by Brain Natriuretic Peptide", PEDIATRIC CARDIOLOGY, SPRINGER-VERLAG, US, vol. 32, no. 8, 13 April 2011 (2011-04-13), pages 1106-1109, XP019973580, ISSN: 1432-1971, DOI: 10.1007/S00246-011-9986-8 whole doc, in particular abstract and fig.1 -----	1-21
A	MING-YII HUANG ET AL: "Acute-Phase Reactants and a Supplemental Diagnostic Aid for Kawasaki Disease", PEDIATRIC CARDIOLOGY, SPRINGER-VERLAG, US, vol. 31, no. 8, 19 October 2010 (2010-10-19), pages 1209-1213, XP019861454, ISSN: 1432-1971, DOI: 10.1007/S00246-010-9801-Y whole doc, in particular abstract and fig.1 -----	1-21
X	WO 2008/021290 A2 (HOMESTEAD CLINICAL CORP [US]; INST SYSTEMS BIOLOGY [US]; HOOD LEROY [U]) 21 February 2008 (2008-02-21) whole doc, in particular sequence with seq. id. no, 13679 and p. 224, line 2 -----	7-17
A	WO 2007/003594 A1 (SOLVAY PHARM GMBH [DE]; WALTHER THOMAS [DE]) 11 January 2007 (2007-01-11) whole doc, in particular claims 11-17, p. 24, lines 7-22. -----	1-6, 18-21
X	SAINT-FAUST ET AL: "Syndrome de Kawasaki chez 1 nourrisson: difficultes diagnostiques et complications liees a l'age", ARCHIVES DE PEDIATRIE, ELSEVIER, PARIS, FR, vol. 14, no. 12, 8 November 2007 (2007-11-08), pages 1427-1430, XP022364180, ISSN: 0929-693X, DOI: 10.1016/J.ARCPED.2007.08.018 the whole document -----	7-17
A		1-6, 18-21
X		19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/033514

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.:
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:
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:

see additional sheet

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 fees, this Authority did not invite payment of additional fees.
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.:

1-21(partially)

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-21(partially)

An assay/kit for diagnosing Kawasaki disease based on meprin A as marker. Further a kit, a computer readable storage medium and a method for treating Kawasaki disease.

2. claims: 1-21(partially)

An assay/kit for diagnosing Kawasaki disease based on filamin B as marker. Further a kit, a computer readable storage medium and a method for treating Kawasaki disease.

3. claims: 1-21(partially)

An assay/kit for diagnosing Kawasaki disease based on filamin C as marker. Further a kit, a computer readable storage medium and a method for treating Kawasaki disease.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/033514

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008021290	A2	21-02-2008	
		AU 2007284651 A1	21-02-2008
		CA 2660286 A1	21-02-2008
		EP 2057465 A2	13-05-2009
		EP 2520935 A2	07-11-2012
		JP 2010500568 A	07-01-2010
		US 2012087862 A1	12-04-2012
		WO 2008021290 A2	21-02-2008

WO 2007003594	A1	11-01-2007	NONE
