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(88) Date of publication of the international search report:

9 September 2016

(54) Title: DRESSING

(57) Abstract: The invention relates to a surgical or wound dressing comprising a sheet of gellan gum and an antifibrotic agent. Methods of producing dressings comprising gellan gums and biologically active agents area also produced.



WO 2016/113550 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2016/050061

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61L15/28 A61L15/44
 ADD. A61L27/34 A61L27/54

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)
 A61L

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, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2008/067518 A2 (INNOGRAFT LLC [US]; PINCHUK LEONARD [US]; KATO YASUSHI PEDRO [US]; RAM) 5 June 2008 (2008-06-05)	10
A	claim 41	1-9, 11-19, 29-35
X	WO 2006/037606 A2 (SWITCH BIOTECH AG [DE]; UNIV MUENCHEN L MAXIMILIANS [DE]; SCHMIDT ROLA) 13 April 2006 (2006-04-13)	1,3-9, 11-19, 29-35
Y	page 16, line 21 - page 17, line 30 page 19, line 16 - line 22	2,10
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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 26 April 2016	Date of mailing of the international search report 11/07/2016
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Fort, Marianne

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2016/050061

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.:

1-19, 29-35

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: 1-19, 29-35

A surgical or wound dressing comprising a sheet of gellan gum and an antifibrotic agent, a method for producing the same, a method of treating an eye, wound, burn or surgical incision comprising applying applying a dressing according to claims 1 to 7 and 11-16 to the eye, wound, urn or surgical incision and a bandage or sticking plater comprising a layer of the dressing according to claims 1-7 and 11-16

2. claims: 20-28

An implant comprising on at least a portion of the surface of the implant, a gellan gum layer

3. claim: 36

A method of analysing a condition of a wound or burn, comprising contacting the wound or burn with a dressing according to claims 1 to 7 or 11 to 16, allowing fluid from the wound or burn to pass into or through the dressing, and analysing the fluid in the dressing or which has passed through the dressing.

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2016/050061

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ZHANG Z ET AL: "Recombinant human decorin inhibits TGF-beta1-induced contraction of collagen lattice by hypertrophic scar fibroblasts", BURNS, BUTTERWORTH HEINEMANN, GB, vol. 35, no. 4, 1 June 2009 (2009-06-01), pages 527-537, XP026068030, ISSN: 0305-4179, DOI: 10.1016/J.BURNS.2008.08.021 [retrieved on 2009-01-23] cited in the application abstract	2
A	----- WO 2012/054301 A1 (TAUTONA GROUP LP [US]; HORNE KENNETH N [US]; RAJADAS JAYAKUMAR [US]; G) 26 April 2012 (2012-04-26) paragraph [0033] paragraph [0052] paragraph [0113] paragraph [0121] -----	1-19, 29-35

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2016/050061

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 2008067518	A2	05-06-2008	AU 2007325075 A1	05-06-2008
			CA 2671050 A1	05-06-2008
			EP 2117727 A2	18-11-2009
			JP 2010511439 A	15-04-2010
			US 2008132991 A1	05-06-2008
			WO 2008067518 A2	05-06-2008

WO 2006037606	A2	13-04-2006	AU 2005291398 A1	13-04-2006
			CA 2582474 A1	13-04-2006
			EP 1666075 A1	07-06-2006
			EP 1888134 A2	20-02-2008
			NZ 553752 A	27-08-2010
			WO 2006037606 A2	13-04-2006

WO 2012054301	A1	26-04-2012	US 2013303480 A1	14-11-2013
			US 2015327972 A1	19-11-2015
			WO 2012054301 A1	26-04-2012
