Abstract

The invention features alginate and alginate lyase compositions and methods that are useful for the treatment of various conditions and diseases. The invention also provides kits and instructions for use.
C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 2005/0003503 A1 (MANYAK et al.) 06 January 2005 (06.01.2005), para [0001], [0003], [0012], [0017], [0018], [0023], [0026], [0026], [0041], [0051], [0066], and Table 3</td>
<td>1, 117-119, 122, 128-130</td>
</tr>
<tr>
<td>Y</td>
<td>US 2005/0159823 A1 (MELVIK et al.) 20 July 2006 (20.07.2006), Abstract, para [0005], [0007], [0010], [0013], [0047], [0049], [0066], [0073], [0076], [0084], [0101], and [0102]</td>
<td>2-10, 103, 107-110, 113-116, 120, 123-127, 131, 141-155, 169, 171</td>
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<tr>
<td>Y</td>
<td>US 2005/0143286 A1 (SINGH et al.) 30 June 2005 (30.06.2005), para [0014], [0028], [0061], [0065], [0066], and [0091]</td>
<td>120</td>
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</tbody>
</table>

Further documents are listed in the continuation of Box C.

* 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
19 February 2009 (19.02.2009)

Date of mailing of the international search report
03 MAR 2009

Name and mailing address of the ISA/US
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Facsimile No. 571-273-3201

Authorized officer:
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PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)
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.: 87-102, 104-106, 111-112, and 121 because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

This International Searching Authority found multiple inventions in this international application, as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I claims 1-10, 103, 107-110, 113-120, 122-131, 135-137, 141-155 and 171 are directed to a method for dissolving an alginate based biomaterial in a subject and a method for treating a subject having a vascular or non-vascular condition and a composition comprising an alginate lyase and a kit.

Group II claims 11-17 and 156 are directed to method for treating a subject having a neoplastic growth and a kit.

Group III claims 18-23 and 168 are directed to a method for treating or preventing osteoporosis in a subject and a kit.

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 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.: 1-10, 103, 107-110, 113-120, 122-131, 135-137, 141-155 and 169-171

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.
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<tr>
<td>Y</td>
<td>US 2005/0095428 A1 (DICARLO et al.) 05 May 2005 (05.05.2005), para [0068], [0083], and [0087]</td>
<td>10</td>
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Continuation of:

Box No III (unity of invention is lacking)

Group IV claims 24-31 and 157-159 are directed to a method for the selective dissolution of an occlusion in a subject and a method for the selective delivery of a therapeutic agent to a targeted non-occluded vessel and a kit.

Group V claims 32-34 and 160 are directed to a method for the selective control of bulking or remodeling in a subject and a kit.

Group VI claims 35 and 167 are directed to a method for lung volume reduction therapy in a subject and a kit.

Group VII claims 36-72, 132-134, and 161-164 are directed to a method for the controlled release of an agent in a subject, a method for the controlled release of a label in a subject, a method for the controlled release of a label to mark lesions for radiosurgery and a method for the controlled release of a contrast agent or the selective dissolution of a biocompatible material in a subject and a kit.

Group VIII claims 73-78 and 165-166 are directed to a method for the selective dissolution of a wound dressing in a subject and a kit.

Group IX claims 79-86, 138-140 are directed to a method of making a dissolvable wound dressing and a wound dressing.

Claims 169 and 170 are generic to the above groups with regard to a kit comprising further a divalent metal chelator and instructions for use.

The shared technical feature of Groups I-IX is an alginate based biomaterial and its use. However, this is not an improvement over the prior art of US 6642363 B1 to Mooney et al. (04.11.2003) that teaches an alginate based biomaterial and its use (abstract). Accordingly, unity of invention is lacking under PCT Rule 13.

Note: Claims Nos: 87-102, 104-106, 111-112, and 121 have been found to be unsearchable because they are dependent claims not drafted in accordance with the second and third sentences of Rule 6.4(a).