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Published:

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14 August 2008



WO 2007/055950 A3

(54) Title: POLYCATION-POLYANION COMPLEXES, COMPOSITIONS AND METHODS OF USE THEREOF

(57) Abstract: One aspect of the present invention relates to compositions and methods comprising polyelectrolyte molecules for treating patients who have certain diseases. Aspects of the invention relate to using certain polyelectrolyte compositions in therapy. According to the invention polyelectrolyte compositions may be used, for example, to slow or stop cell growth, kill cells (e.g., via necrotic or apoptotic pathways), promote fibrosis, or a combination thereof. In one aspect of the invention, certain toxic (e.g., cytotoxic) properties of polyelectrolytes are exploited for therapeutic purposes, hi certain embodiments, compositions and methods of the invention are used to target polyelectrolyte toxicity to predetermined regions within a subject, while minimizing undesirable toxicity at other regions with the subject. In certain embodiments, the present invention relates to lung- volume-reduction therapy using a polyelectrolyte composition.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/042338

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61K47/48 A61P43/00

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)
A61K A61P

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 practical, search terms used)
EPO-Internal; BIOSIS, WPI Data, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/105676 A (BISTECH INC [US]; INGENITO EDWARD M D [US]) 24 December 2003 (2003-12-24)	1,4-11, 15,16, 25, 28-34, 38,50, 51,53, 54, 69-73, 77-87, 90,94, 95,104, 107-113, 117,129, 130,132, 133, 148-156
X	the whole document	160, 163-168, 176,177,

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 document 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.
- *Z* document member of the same patent family

Date of the actual completion of the international search 9 June 2008	Date of mailing of the international search report 19/06/2008
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Orlando, Michele
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/042338

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
		186, 189, 190, 192-195, 199, 211, 212, 214, 215, 230-234
Y	page 25, lines 6-10 page 26, line 23 - page 29, line 28 page 32, lines 14-18; claims 1-11	1-237
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X	paragraphs [0011], [0058] - [0080], [0089]; claims 1-11	160, 163-168, 176, 177, 186, 189, 190, 192-195, 199, 211, 212, 214, 215, 230-234

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International application No
PCT/US2006/042338

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/13908 A (INGENITO EDWARD P [US]) 1 March 2001 (2001-03-01)	1,4-11, 15,16, 25, 28-34, 38,50, 51,53, 54, 69-72, 77-87, 90,94, 95,104, 107-113, 117,129, 130,132, 133, 148-155
Y	the whole document page 11, line 25 - page 14, line 31; claims 1-54; figure 9; example 6	1-237
X	INGENITO E P ET AL: "Bronchoscopic Lung Volume Reduction Using Tissue Engineering Principles" AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE, AMERICAN LUNG ASSOCIATION, NEW YORK, NY, US, vol. 167, 1 January 2003 (2003-01-01), pages 771-778, XP003009383 ISSN: 1073-449X cited in the application	1,4,5, 7-10,15, 25, 28-34, 38,50, 51,53, 54, 69-72, 77-81, 83-87, 90,104, 107-113, 117,129, 130,132, 133, 148-152, 154,155
Y	the whole document page 772, column 2, paragraph 3 ----- -/--	1-237

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/042338

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	INGENITO E P ET AL: "Bronchoscopic Volume Reduction, A Safe and Effective Alternative to Surgical Therapy for Emphysema" AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE, AMERICAN LUNG ASSOCIATION, NEW YORK, NY, US, vol. 164, 1 January 2001 (2001-01-01), pages 295-301, XP003009382 ISSN: 1073-449X	1,4,5, 7-10,15, 25, 28-34, 38,50, 51,53, 54, 69-72, 77-81, 83-87, 90,104, 107-113, 117,129, 130,132, 133, 148-152, 154,155
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X	BRENNER MATT ET AL: "Innovative approaches to lung volume reduction for emphysema" CHEST, vol. 126, no. 1, July 2004 (2004-07), pages 238-248, XP002483341 ISSN: 0012-3692	1,4,5, 7-10,15, 25, 28-34, 38,50, 51,53, 54, 69-72, 77-81, 83-87, 90,104, 107-113, 117,129, 130,132, 133, 148-152, 154,155
Y	the whole document page 240, column 1, paragraph 2 - page 241, column 2, paragraph 1	1-237
P,X	WO 2006/066234 A (AERIS THERAPEUTICS INC [US]; INGENITO EDWARD P [US]) 22 June 2006 (2006-06-22) the whole document	1-237
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P,X	WO 2006/009699 A (PNEUMRX INC [US]; GONG GLEN [US]; DIECK RONALD [US]) 26 January 2006 (2006-01-26) the whole document	1-159
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/042338

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/042338

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:

Although claims 77-159 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
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:

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable 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.:

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/042338

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