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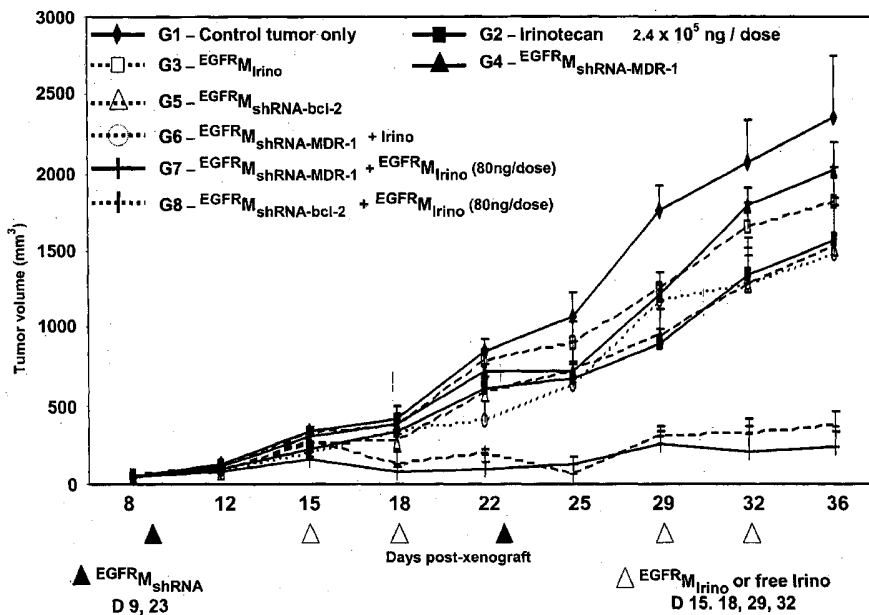
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

(54) Title: DELIVERING FUNCTIONAL NUCLEIC ACIDS TO MAMMALIAN CELLS VIA BACTERIALLY DERIVED, INTACT MINICELLS



(57) Abstract: Intact bacterially derived minicells containing functional nucleic acids or plasmids encoding functional nucleic acids can reduce, in targeted mammalian cells, drug resistance, apoptosis resistance, and neoplasticity, respectively. Methodology that employs minicells to deliver functional nucleic acids, targeting the transcripts of proteins that contribute to drug resistance or apoptosis resistance, *inter alia*, can be combined with chemotherapy to increase the effectiveness of the chemotherapy.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2005/003614

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

C12N 15/63 (2006.01) *A61K 48/00* (2006.01)

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)

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)

WPIDS, MEDLINE, CA. Keywords: mini()cell*, minicell*, medic*, pharma*, drug*, therap*, carry, carri*, deliver*, admin*, vector*, treat*,

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2003/033519 A2 (BRAHMBHATT et al.) 24 April 2003 (page 21).	1-60
X	US 2003/0203481 A1 (SURBER et al.) 30 October 2003 (see paragraphs 34, 41, 45, 45-47, 106, 379, 493, 497, 503, 510, 666-669, 697, examples and claims).	1-60
P,X	WO 2005/056749 A2 (ENGINEIC MOLECULAR DELIVERY PTY. LTD. et al.) 23 June 2005 (see examples and claims).	1-60

 Further documents are listed in the continuation of Box C See patent family annex

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

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16 February 2006Date of mailing of the international search report
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Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No: III

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. Note that Rule 13.2 states that where a group of inventions is claimed in one and the same international application, the requirement of unity of invention referred to in Rule 13.1 shall be fulfilled only where there is a technical relationship among those inventions involving one or more of the same corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

The ISA has identified two separate inventions.

Claims 1-29, 37-45 and 49 define compositions and methods for the delivery of nucleic acids to cells. The compositions and methods of these claims involve the combination of minicells with nucleic acid molecules which target the transcript of a protein of the target cell. This combination is considered to represent a first special technical feature unifying claims 1-29, 37-45 and 49.

Claims 30-36, 46-48 and 50-60 are not limited in any manner to targeting the transcript of a protein in a target cell. These claims merely define methods for delivering a nucleic acid to a cell for any purpose. However, this feature was known from the prior art. WO 2003/033519 and US 2003/0203481 (both cited herein) disclose various applications of minicells as vectors for DNA transfer, gene therapy and drug delivery in vitro and in vivo. As the use of minicells to deliver nucleic acid molecules to cells was known, this cannot constitute a special technical feature. Consequently, claims 30-36, 46-48 and 50-60 do not share a special technical feature with the remaining claims.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/IB2005/003614

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member					
WO 03033519	CA 2463631	CN 1599797	EP 1446489	US 2005222057		
US 2003203481	AU 2002318168	CA 2517027	EP 1487965	US 6930182	US 2003166099	US 2003166279
	US 2003190601	US 2003190683	US 2003190749	US 2003194714	US 2003194798	US 2003198995
	US 2003198996	US 2003199005	US 2003199088	US 2003199089	US 2003202937	US 2003203411
	US 2003207833	US 2003211086	US 2003211599	US 2003219408	US 2003219888	US 2003224369
	US 2003224444	US 2003232335	US 2005147590	WO 03072014		
WO 2005056749	NONE					
<p>Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.</p> <p style="text-align: right;">END OF ANNEX</p>						