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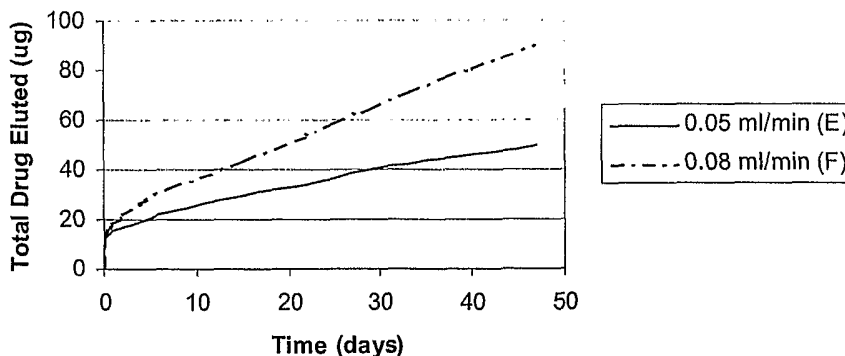
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS, DEVICES, AND COATINGS FOR CONTROLLED ACTIVE AGENT RELEASE

Agent Elution - Extended Time Period



(57) Abstract: The present invention relates to methods, devices, and coatings, wherein active agent release is determined by deposition rate of a coating or material. In an embodiment, the invention includes a method for coating a medical device, including identifying active agent elution rates for a coating composition applied to substrates at a plurality of coating deposition rates, selecting one of the coating deposition rates, and applying the coating composition to the medical device at the selected deposition rate. In an embodiment, the invention includes a combination including a medical device and a composition for coating the surface of a medical device, with an active agent in a manner that permits the coated surface to release the active agent over time when implanted *in vivo*.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61L27/34 A61L27/54 A61L31/10 A61L31/16

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/086569 A1 (SPARER RANDALL V ET AL) 6 May 2004 (2004-05-06) page 1, paragraph 8 - paragraph 9 page 3, paragraph 39 - paragraph 40 page 4, paragraph 49 - paragraph 50 page 5, paragraphs 56,59,63 - paragraph 64 page 6, paragraph 69 - paragraph 70 page 9, paragraph 95 page 10, paragraph 111 - paragraph 112 page 11, paragraph 117 - paragraph 119 page 16, paragraph 167 table 1 claims 1-74 <div style="text-align: center; margin-top: 20px;">----- -/--</div>	1-25

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. "&" document member of the same patent family
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Date of the actual completion of the international search	Date of mailing of the international search report
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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 <p style="text-align: center;">Derrien, A-C</p>
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 2004/089230 A1 (SCHWARZ MARLENE C ET AL) 13 May 2004 (2004-05-13)</p> <p>page 1, paragraph 8 page 2, paragraph 23 - paragraph 24 page 3, paragraph 28 - page 4, paragraph 29 page 5, paragraph 42 page 7, paragraph 64 examples 1,3,4,6</p>	<p>1,2,4, 7-12,15, 16,19, 22,23</p>
X	<p>US 6 042 875 A (DING ET AL) 28 March 2000 (2000-03-28) column 2, line 61 - column 3, line 65 column 4, line 61 - column 8, line 67 example 1</p>	<p>1-13, 15-24</p>
X	<p>WO 02/03890 A (BIOSURFACE ENGINEERING TECHNOLOGIES, INC; OSAKI, SHIGEMASA; ZAMORA, PA) 17 January 2002 (2002-01-17)</p> <p>page 6, line 18 - line 28 page 8, line 5 - page 13, line 18</p>	<p>1-5, 7-12, 15-17, 19,22-24</p>

INTERNATIONAL SEARCH REPORT

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004086569	A1	06-05-2004	NONE
US 2004089230	A1	13-05-2004	NONE
US 6042875	A	28-03-2000	AT 269055 T 15-07-2004 AT 231718 T 15-02-2003 CA 2236182 A1 30-10-1998 DE 69810986 D1 06-03-2003 DE 69810986 T2 30-10-2003 DE 69824648 D1 22-07-2004 DE 69824648 T2 30-06-2005 EP 0879595 A2 25-11-1998 JP 10305105 A 17-11-1998 US 5879697 A 09-03-1999
WO 0203890	A	17-01-2002	AU 7928801 A 21-01-2002