(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 15 June 2006 (15.06.2006)

English

(10) International Publication Number WO 2006/063158 A3

(51) International Patent Classification: A61L 31/16 (2006.01) A61L 27/54 (2006.01)

(21) International Application Number:

PCT/US2005/044462

(22) International Filing Date:

8 December 2005 (08.12.2005)

(25) Filing Language:

(26) Publication Language: English

(30) Priority Data:

11/007,866 9 December 2004 (09.12.2004)

(71) Applicant (for all designated States except US): BOSTON SCIENTIFIC SCIMED, INC. [US/US]; One Scimed Place, Maple Grove, MN (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): HELMUS, Michael, N. [US/US]; 2 Jamesbury Drive, Worcester, MA 01609 (US).

(74) Agents: PARK, Keum, J. et al.; Mayer & Williams PC, 2nd Floor, 251 North Avenue West, Westfield, NJ 07090

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

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

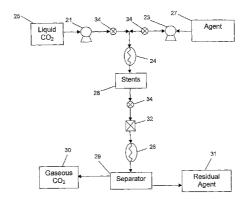
with international search report

before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 27 July 2006

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.

USE OF SUPERCRITICAL FLUIDS TO INCORPORATE BIOLOGICALLY ACTIVE AGENTS INTO (54) Title: NANOPOROUS MEDICAL ARTICLES



(57) Abstract: The present invention is directed to a method in which a supercritical fluid that comprises a carrier fluid and a biologically active agent is brought into contact with medical article that comprises a nanoporous surface region. A variety of medical articles may be used in the practice of the present invention, including implantable or insertable medical devices such as bone plates, joint prostheses, vascular grafts, stent grafts, stents, catheters, guide wires, balloons, filters, vascular patches, shunts, and coils, among others. The nanoporous surface region may be, for example, metallic, ceramic, or polymeric in nature. Examples of biologically active agents include antirestenotic agents and agents that promote tissue adhesion, among others. Carbon dioxide is one of many carrier fluids that may be employed.

INTERNATIONAL SEARCH REPORT

Int ional application No PCT/US2005/044462

A. CLASSIFICATION OF SUBJECT MATTER INV. A61L27/54 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, EMBASE, BIOSIS, COMPENDEX, INSPEC

	SENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where appropriate, of t	Relevant to claim No.		
Υ	US 2003/044514 A1 (RICHARD ROPE 6 March 2003 (2003-03-06) cited in the application the whole document	1-20		
Y	WO 94/18264 A (MINNESOTA MININ MANUFACTURING COMPANY; PERMAN, BARTKUS,) 18 August 1994 (1994 claims; examples	CRAIG, A;	1-20	
		-/		
X Furi	ther documents are listed in the continuation of Box C.	X See patent family annex.		
Special	categories of cited documents :	TT lotor degrees trublished effects a lot		
consider considering of the considering of the considering of the considering	dent defining the general state of the art which is not dered to be of particular relevance document but published on or after the international date ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another on or other special reason (as specified) ent referring to an oral disclosure, use, exhibition or means ent published prior to the international filing date but 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 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	Date of mailing of the international sea	arch report	
4	7 May 2006	31/05/2006		
1	mailing address of the ISA/	Authorized officer		

INTERNATIONAL SEARCH REPORT

Int itonal application No PCT/US2005/044462

Gerckens Ulrich et al.: "Evaluation of a Tacrolimus-eluting coronary stent with nanoporous ceramic coating in treatment of native coronary artery lesions: Phase I and II of the present study." JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY, vol. 41, no. 6 Supplement A, 19 March 2003 (2003-03-19), page 7A, XPO02381361 & 52ND ANNUAL SCIENTIFIC SESSION OF THE AMERICAN COLLEGE OF CARDIOLOGY; CHICAGO, IL, USA; MARCH 30-APRIL 02, 2003 ISSN: 0735-1097 abstract
Tacrolimus-eluting coronary stent with nanoporous ceramic coating in treatment of native coronary artery lesions: Phase I and II of the present study." JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY, vol. 41, no. 6 Supplement A, 19 March 2003 (2003-03-19), page 7A, XP002381361 & 52ND ANNUAL SCIENTIFIC SESSION OF THE AMERICAN COLLEGE OF CARDIOLOGY; CHICAGO, IL, USA; MARCH 30-APRIL 02, 2003 ISSN: 0735-1097

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int Honal application No PCT/US2005/044462

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 2003044514	A1	06-03-2003	CA EP JP WO	2447557 A1 1395305 A1 2005505318 T 02100456 A1	19-12-2002 10-03-2004 24-02-2005 19-12-2002
WO 9418264	A	18-08-1994	CA DE DE EP JP US US	2154359 A1 69427121 D1 69427121 T2 0683804 A1 3263080 B2 8506612 T 5340614 A 5508060 A	18-08-1994 23-05-2001 27-09-2001 29-11-1995 04-03-2002 16-07-1996 23-08-1994 16-04-1996