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(54) Title: MEDICAL DEVICES, COATINGS AND COMPOUNDS

(57) Abstract: Implantable medical devices, such as catheters, which comprise a calixarene-derived coating that resists adhesion and/or colonisation of bacteria and/or fungi are described. Also described are calixarene-derived coating materials, intermediates useful in their manufacture, processes for their preparation, and methods for coating of implantable medical devices with the calix arene compounds.

INTERNATIONAL SEARCH REPORT

International application No PCT/GB2013/050052

A. CLASSIFICATION OF SUBJECT MATTER INV. A61L29/08 A61L29/16 ADD.

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 C07C C07D C07F

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)

EPO-Internal, WPI Data

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Υ	US 2011/130465 A1 (DALSIN JEFFREY L [US] ET AL) 2 June 2011 (2011-06-02) figure 1	1-40		
Υ	GB 2 448 153 A (CAMSTENT LTD MBE [GB]) 8 October 2008 (2008-10-08) cited in the application claim 17 page 2 - page 3	1-40		
А	WO 02/083176 A2 (UNIV SHEFFIELD [GB]; CELTRAN LTD [GB]; MACNEIL SHEILA [GB]; SHORT ROB) 24 October 2002 (2002-10-24) cited in the application page 10, lines 31-33	1-40		
X Furt	ner documents are listed in the continuation of Box C. X See patent family anne	<u> </u>		

"A" document defining the general state of the art which is not considered to be of particular relevance	"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			
"E" earlier application or patent but published on or after the international filing date	"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			
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Date of the actual completion of the international search	Date of mailing of the international search report			
6 August 2013	13/08/2013			
Name and mailing address of the ISA/	Authorized officer			
European Patent Office, P.B. 5818 Patentlaan 2				
NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Siebum, Bastiaan			
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* Special categories of cited documents :

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2013/050052

C(Continua	ation). DOCUMENTS CONSIDERED TO BE RELEVANT	Γ
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Α	GRAZIA M L CONSOLI ET AL: "Multivalent calixarene-based-fucosyl derivative: a newbiofilm inhibitor", TETRAHEDRON LETTERS, ELSEVIER, AMSTERDAM, NL, vol. 52, no. 44, 24 August 2011 (2011-08-24), pages 5831-5834, XP028301577, ISSN: 0040-4039, DOI: 10.1016/J.TETLET.2011.08.142 [retrieved on 2011-08-31] the whole document	1-40
X	KARIN WÖLLNER ET AL: "Interaction behaviour of a PDMS-calixarene system and polar analytes characterised by microcalorimetry and spectroscopic methods", ANALYTICAL AND BIOANALYTICAL CHEMISTRY, SPRINGER, BERLIN, DE, vol. 389, no. 6, 5 October 2007 (2007-10-05), pages 1879-1887, XP019559858, ISSN: 1618-2650, DOI: 10.1007/S00216-007-1600-9 figure 1	38
X	SHOICHI SAITO ET AL: "Lower Rim Functionalized Resorcinarenes: Useful Modules for Supramolecular Chemistry", ORGANIC LETTERS, vol. 1, no. 8, 1 October 1999 (1999-10-01), pages 1241-1244, XP055074247, ISSN: 1523-7060, DOI: 10.1021/ol9902125 the whole document	38
X	AGUSTÍ LLEDÓ ET AL: "Deep cavitand receptors with pH-independent water solubility", CHEMICAL COMMUNICATIONS, vol. 46, no. 45, 1 January 2010 (2010-01-01), page 8630, XP055074252, ISSN: 1359-7345, DOI: 10.1039/c0cc03388j scheme 1	28,38

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2013/050052

Patent document cited in search report		Publication date	Patent family member(s)		Publication date	
US 2011130465	A1	02-06-2011	NONE			
GB 2448153	Α	08-10-2008	NONE			
WO 02083176	A2	24-10-2002	CA EP JP US WO	2444518 1381394 2004528089 2004161443 02083176	A2 A B A1	24-10-2002 21-01-2004 16-09-2004 19-08-2004 24-10-2002