

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 October 2010 (07.10.2010)

PCT

(10) International Publication Number
WO 2010/113176 A3

(51) International Patent Classification:

A61K 9/16 (2006.01) C08F 26/06 (2006.01)
A61K 38/28 (2006.01) C08F 26/08 (2006.01)
C09J 133/02 (2006.01) C08F 26/10 (2006.01)
C09J 133/08 (2006.01) C08F 220/04 (2006.01)
C09J 133/10 (2006.01) C08F 222/02 (2006.01)
C09J 133/24 (2006.01) C08F 226/06 (2006.01)

(21) International Application Number:

PCT/IN2010/000204

(22) International Filing Date:

30 March 2010 (30.03.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

857/MUM/2009 31 March 2009 (31.03.2009) IN

(71) Applicant (for all designated States except US): **RELIANCE LIFE SCIENCES PVT. LTD.** [IN/IN]; Dhirubhai Ambani Life Sciences Centre, R-282, TTC Area of MIDC, Thane Belapur Road, Rabale, Navi Mumbai 400 701, Maharashtra (IN).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RANGASWAMY, Vidhya** [IN/IN]; Dhirubhai Ambani Life Sciences Centre, R-282, TTC Area of MIDC, Thane Belapur Road, Rabale, Navi Mumbai 400 701, Maharashtra (IN). **AMINABHAVI, Tejraj, Malleshappa** [IN/IN]; Dhirubhai Ambani Life Sciences Centre, R-282, TTC Area of MIDC, Thane Belapur Road, Rabale, Navi Mumbai 400 701, Maharashtra (IN). **BABU, Vadde, Ramesh** [IN/IN]; Dhirubhai Ambani Life Sciences Centre, R-282, TTC Area of MIDC, Thane Belapur Road, Rabale, Navi Mumbai 400 701, Maharashtra (IN). **MUNDARGI, Raghavendra, Chaluvayya** [IN/IN]; Dhirubhai Ambani Life Sciences Centre, R-282, TTC Area of MIDC, Thane Belapur Road, Rabale, Navi Mumbai 400 701, Maharashtra (IN).

(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every

kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

18 November 2010

(54) Title: NOVEL COPOLYMERS FOR CONTROLLED RELEASE DELIVERY SYSTEM

(57) Abstract: The present disclosure relates to pH-sensitive copolymers poly(methacrylic acid-co-N-vinylcaprolactam), designated as P(MAA-co-VCL). The disclosure in particular provides the synthesis of a copolymer of poly(methacrylic acid-co-N-vinylcaprolactam) and its application for pH sensitive oral delivery of active ingredients *in vitro* and *in vivo*. The invention in particular provides microparticles comprising the copolymers for controlled release of drug delivery. Methods for delivering drug to the lower GI tract, while avoiding exposure to the stomach acids is provided, methods for treating diabetes using controlled release insulin delivery particles are provided.



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INTERNATIONAL SEARCH REPORT

International application No PCT/IN2010/000204
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A. CLASSIFICATION OF SUBJECT MATTER					
INV.	A61K9/16	A61K38/28	C09J133/02	C09J133/08	C09J133/10
	C09J133/24	C08F26/06	C08F26/08	C08F26/10	C08F220/04
	C08F222/02	C08F226/06			
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 C09J C08F

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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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	"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 document 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
"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)	"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.
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 28 September 2010	Date of mailing of the international search report 07/10/2010
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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, Fax: (+31-70) 340-3016	Authorized officer Giménez Miralles, J
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INTERNATIONAL SEARCH REPORT

International application No

PCT/IN2010/000204

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