(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 April 2014 (17.04.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/057026 A1

(51) International Patent Classification:
A61K 9/16 (2006.01) *A61K 9/00* (2006.01)
A61K 9/20 (2006.01)

(21) International Application Number:
PCT/EP2013/071140

(22) International Filing Date:
10 October 2013 (10.10.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12188419.1 12 October 2012 (12.10.2012) EP
61/713,691 15 October 2012 (15.10.2012) US

(71) Applicant: **OMYA INTERNATIONAL AG** [CH/CH]; Baslerstrasse 42, CH-4665 Oftringen (CH).

(72) Inventors: **GERARD, Daniel E.**; Rheinfelderstrasse 12, CH-4058 Basel (CH). **SCHOELKOPF, Joachim**; Buechbühlstrasse 3, CH-8956 Killwangen (CH). **GANE, Patrick A. C.**; Studenweg 8, CH-4852 Rothrist (CH). **EBERLE, Veronika Anna**; Gasstrasse 17, CH-4056 Basel (CH). **ALLES, Rainer**; Riehenstrasse 232, CH-4058 Basel (CH). **PUCHKOV, Maxim**; Krebsenbachweg 13, CH-4148 Pfeffingen (CH). **HUWYLER, Jörg**; In der Schappe 91, CH-4144 Arlesheim (CH).

(74) Agent: **MAIWALD PATENTANWALTS GMBH**; TIEFBRUNNER, Vera, Elisenhof, Elisenstr. 3, 80335 München (DE).

(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, BN, 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, IR, IS, JP, KE, KG, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, 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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

WO 2014/057026 A1

(54) Title: GASTRORETENTIVE DRUG FORMULATION AND DELIVERY SYSTEMS AND THEIR METHOD OF PREPARATION USING FUNCTIONALIZED CALCIUM CARBONATE

(57) Abstract: An instantly floating gastroretentive drug formulation comprising at least one functionalized natural and/or synthetic calcium carbonate-comprising mineral and at least one pharmaceutically active ingredient and at least one formulating aid wherein said functionalized natural or synthetic calcium carbonate is a reaction product of natural or synthetic calcium carbonate with carbon dioxide and one or more acids, wherein the carbon dioxide is formed in situ by the acid treatment and/or is supplied from an external source.