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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
1 October 2015 (01.10.2015)

WIPO | PCT

(10) International Publication Number
WO 2015/144938 A3

(51) International Patent Classification:
A61K 31/58 (2006.01) *A61K 47/48* (2006.01)
A61K 9/00 (2006.01) *A61P 11/00* (2006.01)

(21) International Application Number:
PCT/EP2015/056929

(22) International Filing Date:
30 March 2015 (30.03.2015)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/972,209 28 March 2014 (28.03.2014) US
14162158.1 28 March 2014 (28.03.2014) EP

(71) Applicant: **UNIVERSITE DE LIEGE** [BE/BE]; Patent Department, Avenue Pre-Aily 4, 4031 Angleur (BE).

(72) Inventor; and
(71) Applicant : **MAES, Paul** [BE/BE]; Rue des Coccinelles 12, 4600 Vise (BE).

(72) Inventors: **CATALDO, Didier**; Chemin du Vieux Puits 4, 4877 Olne (BE). **EVRARD, Brigitte**; Clos du Sartay 22, 4053 Embourg (BE). **DUFOUR, Gilles**; Rue Val de Mehaigne 1 bte 23, 4520 Wanze (BE). **DE TULLIO, Pascal**; Voie du Herdier 22, 4020 Jupille-sur-Meuse (BE).

(74) Agent: **CRUMP, Julian**; Beresford Crump LLP, 16 High Holborn, London WC1V 6BX (GB).

(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, 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, ST, 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))*
— *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:
31 March 2016

(54) Title: COMPOSITION COMPRISING CYCLODEXTRIN AND BUDESONIDE DERIVATIVES FOR THE TREATMENT AND PROPHYLAXIS OF PULMONARY INFLAMMATIONS

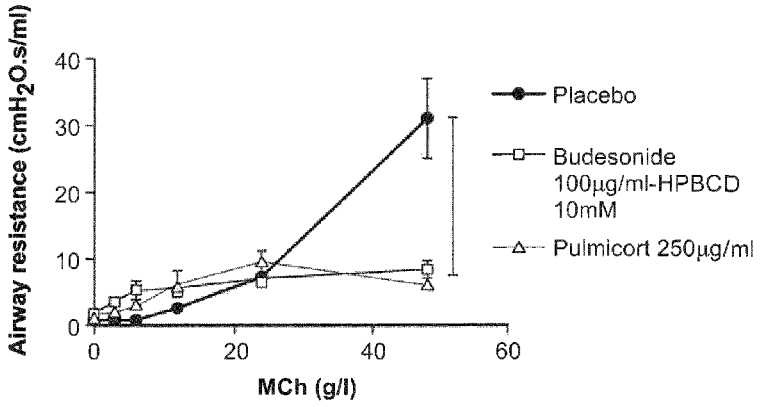


FIG. 5

(57) Abstract: The present invention relates to novel and useful pharmaceutical compositions formulated with a cyclodextrin compound and a budesonide derivative for the treatment and/or prevention of pulmonary inflammatory disease. The present invention also relates to a novel and useful analytical technique for the detection and the quantification of HP-β-CD in solution. More specifically, the present invention relates to the use of a validated 1H NMR analysis for the detection and quantification of cyclodextrins directly in pharmaceutical formulations without any extraction or separation steps for liquid formulations.

WO 2015/144938 A3