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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 February 2004 (19.02.2004)

PCT

(10) International Publication Number
WO 2004/014418 A2

(51) International Patent Classification[7]: A61K 39/02

(21) International Application Number:
PCT/EP2003/008571

(22) International Filing Date: 31 July 2003 (31.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0218037.0	2 August 2002 (02.08.2002)	GB
0218036.2	2 August 2002 (02.08.2002)	GB
0218035.4	2 August 2002 (02.08.2002)	GB
0218051.1	2 August 2002 (02.08.2002)	GB
0220197.8	30 August 2002 (30.08.2002)	GB
0220199.4	30 August 2002 (30.08.2002)	GB
0225524.8	1 November 2002 (01.11.2002)	GB
0225531.3	1 November 2002 (01.11.2002)	GB
0230164.6	24 December 2002 (24.12.2002)	GB
0230168.7	24 December 2002 (24.12.2002)	GB
0230170.3	24 December 2002 (24.12.2002)	GB
0305028.3	5 March 2003 (05.03.2003)	GB

(71) Applicant *(for all designated States except US)*: **GLAXOSMITHKLINE BIOLOGICALS S.A.** [BE/BE]; Rue de l'Institut 89, B-1330 Rixensart Brussels (BE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BERTHET, Francois-Xavier, Jacques** [FR/BE]; GlaxoSmithKline Biologicals s.a., Rue de l'Institut 89, B-1330 Rixensart Brussels (BE). **BIEMANS, Ralph** [BE/BE]; GlaxoSmithKline Biologicals s.a., Rue de l'Institut 89, B-1330 Rixensart Brussels (BE). **DENOEL, Philippe** [BE/BE]; GlaxoSmithKline Biologicals s.a., Rue de l'Institut 89, B-1330 Rixensart Brussels (BE). **FERON, Christiane** [BE/BE]; GlaxoSmithKline Biologicals s.a., Rue de l'Institut 89, B-1330 Rixensart Brussels (BE). **GORAJ, Karine** [BE/BE]; GlaxoSmithKline Biologicals S.A., Rue de l'Institut 89, B-1330 Rixensart Brussels (BE). **POOLMAN, Jan** [NL/BE]; GlaxoSmithKline Biologicals s.a., Rue de l'Institut 89, B-1330 Rixensart Brussels (BE). **WEYNANTS, Vincent** [BE/BE]; GlaxoSmithKline Biologicals s.a., Rue de l'Institut 89, B-1330 Rixensart Brussels (BE).

(74) Agent: **STEPHEN, Robert**; GlaxoSmithKline, GSK House, 980 Great West Road, Brentford, Middlesex TW8 9EP (GB).

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

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

Published:
— *without international search report and to be republished upon receipt of that report*

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.

(54) Title: VACCINE COMPOSITION

(57) Abstract: The present invention relates to immunogenic compositions and vaccines for the treatment and prevention of Neisserial disease. Immunogenic compositions of the invention contain combinations of antigens selected from at least two different classes of antigens including adhesins, autotransporter proteins, toxins, iron acquisitions proteins and membrane-associated protein (preferably integral outer membrane protein)s. Such combinations of antigens are able to target the immune response against different aspects of the neisserial life cycle, resulting in a more effective immune response.

WO 2004/014418 A2