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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 August 2013 (08.08.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/113501 A1

(51) International Patent Classification:
A61K 47/48 (2006.01) *A61P 37/00* (2006.01)
A61K 39/39 (2006.01) *A61P 31/00* (2006.01)
A61P 35/00 (2006.01)

(21) International Application Number:
PCT/EP2013/000291

(22) International Filing Date:
31 January 2013 (31.01.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/EP2012/000420
31 January 2012 (31.01.2012) EP

(71) Applicant: **CUREVAC GMBH** [DE/DE]; Paul-Ehrlich-Str. 15, 72076 Tübingen (DE).

(72) Inventors; and
(71) Applicants *(for US only)*: **BAUMHOF, Patrick** [DE/DE]; Erlenstrasse 28, 72144 Dusslingen (DE). **KRAMPS, Thomas** [DE/DE]; Lange Gasse 44, 72070 Tübingen (DE). **VOSS, Söhnke** [DE/DE]; Savoyer Weg 12, 69151 Neckargemünd (DE). **KALLEN, Karl-Josef** [DE/DE]; Philipp-von-Heck-Str. 1, 72076 Tübingen (DE). **FOTIN-MLECZEK, Mariola** [DE/DE]; Chemnitzer Weg 10, 71065 Sindelfingen (DE).

(74) Agents: **GRAF VON STOSCH, Andreas** et al.; Graf Von Stosch Patentanwaltsgesellschaft mbH, Prinzregentenstrasse 22, 80538 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, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *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))*

— *with sequence listing part of description (Rule 5.2(a))*

WO 2013/113501 A1

(54) **Title**: PHARMACEUTICAL COMPOSITION COMPRISING A POLYMERIC CARRIER CARGO COMPLEX AND AT LEAST ONE PROTEIN OR PEPIDE ANTIGEN

(57) **Abstract**: The present invention is directed to a pharmaceutical composition including (e.g. for use as an adjuvant) a polymeric carrier cargo complex, comprising as a carrier a polymeric carrier formed by disulfide-crosslinked cationic components; and as a cargo at least one nucleic acid molecule, and at least one antigen that is selected from an antigen from a pathogen associated with infectious disease; an antigen associated with allergy or allergic disease; an antigen associated with autoimmune disease; or an antigen associated with a cancer or tumour disease, or in each case a fragment, variant and/or derivative of said antigen. The pharmaceutical composition allows for efficient induction of an adaptive immune response directed against said antigen. The present invention furthermore provides kits, as well as the use of the pharmaceutical composition or the kit as a vaccine, particularly in the treatment of infectious diseases, allergies, autoimmune diseases and tumour or cancer diseases.