

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
24 October 2002 (24.10.2002)

PCT

(10) International Publication Number
WO 02/083069 A2

(51) International Patent Classification⁷: **A61K**

(72) Inventors; and

(21) International Application Number: PCT/US02/11379

(75) Inventors/Applicants (for US only): **CHING, Wei-Mei** [US/US]; 8014 Whittier Blvd., Bethesda, MD 20817 (US). **KELLY, Daryl, J.** [US/US]; 12230 Flint Ridge Road, Newark, OH 43054 (US). **DASCH, Gregory, A.** [US/US]; 5473 Seville Lane, Stone Mountain, GA 30087 (US).

(22) International Filing Date: 12 April 2002 (12.04.2002)

(25) Filing Language: English

(74) Agent: **BELLAMY, Werten, F., W.**; Center of Technology Transfer (USUHS), 4301 Jones Bridge Road, Bethesda, MD 20814-4799 (US).

(26) Publication Language: English

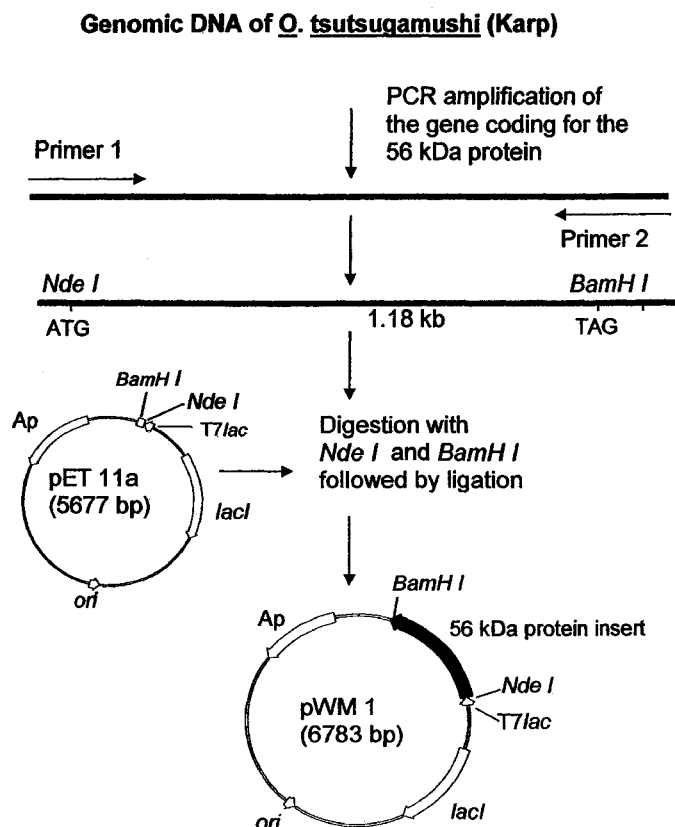
(30) Priority Data:
60/283,373 13 April 2001 (13.04.2001) US

(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, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): **UNITED STATES GOVERNMENT** as represented by **THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES** [US/US]; Office of Technology Transfer, 4301 Jones Bridge Road, Rm. AIO40T, Bethesda, MD 20814-4799 (US).

[Continued on next page]

(54) Title: TRUNCATED RECOMBINANT MAJOR OUTER MEMBRANE PROTEIN ANTIGEN (R56) OF *ORIENTA TSUTSUGAMUSHI* STRAINS KARP, KATO AND GILLIAM AND ITS USE IN ANTIBODY BASED DETECTION ASSAYS AND VACCINES.



(57) Abstract: A recombinant, refolded non-fusion polypeptide expressed from a truncated r56 gene of the causative agent of scrub typhus, *Orienta tsutsugamushi* or the karp, kato and Gilliam strains has been produced. The invention is useful for detecting prior exposure to scrub typhus, screening for and/or identification of at least one infectious strain similarity (i.e. a Karp-like, Kato-like or Gilliam-like strain) based on its strength of reaction toward a truncated protein and as a component in vaccine formulations and production of immune globulins for passive prophylaxis and immunity in subjects.

WO 02/083069 A2



(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, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, 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.