

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 December 2005 (29.12.2005)

PCT

(10) International Publication Number
WO 2005/123762 A3

(51) International Patent Classification:
C07K 14/025 (2006.01) **A61K 39/12** (2006.01)
C12N 15/63 (2006.01)

(21) International Application Number:
PCT/IB2005/001725

(22) International Filing Date: 20 June 2005 (20.06.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/CH2004/000373
18 June 2004 (18.06.2004) CH

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

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

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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM,

Declaration under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

27 April 2006

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: CODON-OPTIMIZED HPV16 LI FOR SALMONELLA VACCINE STRAINS AGAINST HUMAN PAPILLOMAVIRUS TYPE 16

(57) Abstract: The present invention relates to a novel nucleic acid sequence (HPV16 L1S) encoding antigenic HPV16 L1 protein as provided in SEQ ID NO: 1, wherein the said sequence has atleast one modified codon for optimum stability of recombinant plasmid vector when transformed in the prokaryotic micro-organism for improved immunogenicity of the resulting prokaryotic micro-organism. The invention further relates to constructing recombinant vectors pFS14nsdHPV16L1 and pFS14nsdHPV16 kan L1S harboring SEQ ID NO: 1, wherein the former carries Ampicillin and the latter, Kanamycin as a selection marker. The invention also relates to an attenuated strain of a prokaryotic micro-organism transformed with nucleic acid encoding HPV16 (Human Papillomavirus) major capsid protein and expressing the corresponding protein. In addition the invention discloses a process of producing a vaccine based on prokaryotic micro-organism for the treatment of papillomavirus infection and associated risk of cancer.

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