

(51) International Patent Classification:  
*A61K 39/12* (2006.01)(21) International Application Number:  
PCT/US2015/066549(22) International Filing Date:  
18 December 2015 (18.12.2015)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
62/095,331 22 December 2014 (22.12.2014) US(71) Applicant: **MERCK SHARP & DOHME CORP.**  
[US/US]; 126 East Lincoln Avenue, Rahway, New Jersey  
07065-0907 (US).

(72) Inventors; and

(71) Applicants (*for US only*): **CASIMIRO, Danilo, R.**  
[US/US]; 770 Sumneytown Pike, West Point, Pennsylvania  
19486 (US). **BETT, Andrew** [CA/US]; 770 Sumneytown  
Pike, West Point, Pennsylvania 19486 (US). **COLLER,**  
**Beth-Ann Griswold** [US/US]; 770 Sumneytown Pike,  
West Point, Pennsylvania 19486 (US). **DHANASEKARAN,**  
**Govindarajan** [IN/US]; 770 Sumneytown Pike, West Point,  
Pennsylvania 19486 (US). **CHINTALA, Ramesh, V.** [US/US]; 770 Sumneytown  
Pike, West Point, Pennsylvania 19486 (US).(74) Common Representative: **MERCK SHARP & DOHME**  
**CORP.;** 126 East Lincoln Avenue, Rahway, New Jersey  
07065-0907 (US).(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).

## Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

## Published:

- without international search report and to be republished upon receipt of that report (Rule 48.2(g))
- with sequence listing part of description (Rule 5.2(a))

(54) Title: DENGUE VIRUS VACCINE COMPOSITIONS AND METHODS OF USE THEREOF

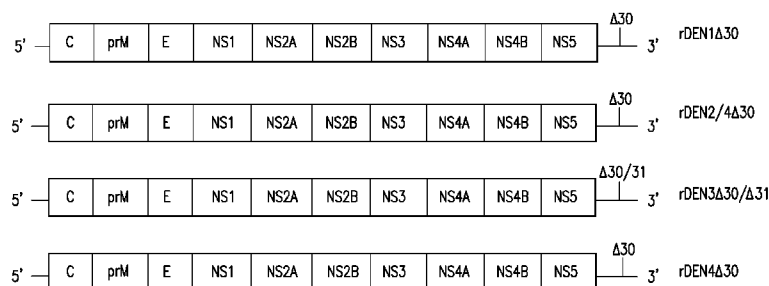


FIG. 1

(57) **Abstract:** The present invention relates to dengue virus vaccine compositions comprising a first and a second dengue vaccine, wherein the first dengue vaccine comprises at least one live, 5 attenuated dengue virus or live, attenuated chimeric dengue virus and the second dengue vaccine is a recombinant dengue subunit vaccine, a DNA vaccine, a conjugate vaccine, or an inactivated dengue vaccine; wherein the genome of the live attenuated dengue virus or the live attenuated chimeric dengue virus comprises a 30 nucleotide deletion of the TL2 stem-loop structure of the 3' untranslated region. The dengue virus vaccine compositions of the invention may further 10 comprise one or more adjuvants. In preferred embodiments of the invention, the first and the second dengue vaccine are tetavalent. The invention also relates to methods of using the dengue virus vaccine compositions of the invention to treat or prevent dengue infection, or to prevent, ameliorate, or delay the onset or progression of the clinical manifestations thereof.

