



(51) International Patent Classification:

A61K 39/00 (2006.01) *C12N 15/113* (2010.01)
A61P 37/04 (2006.01) *C12N 15/117* (2010.01)

(21) International Application Number:

PCT/US2021/021532

(22) International Filing Date:

09 March 2021 (09.03.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

202011010025 09 March 2020 (09.03.2020) IN
202011055399 19 December 2020 (19.12.2020) IN

(71) Applicants: **DYNAVAX TECHNOLOGIES CORPORATION** [US/US]; 2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **SERUM INSTITUTE OF INDIA PRIVATE LIMITED** [IN/IN]; 212/2, Off Soli Poonawalla Road, Hadapsar, Pune, Maharashtra 411028 (IN).

(72) Inventors: **CAMPBELL, John D.**; c/o Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **COFFMAN, Robert L.**; c/o Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **HYER, Randall N.**; c/o Dynavax Technologies Corporation,

2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **JANSSEN, Robert S.**; c/o Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **NOVACK, David**; c/o Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **GOHLKE, Martin**; c/o Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **URBAN, Maureen**; c/o Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608 (US). **GAIROLA, Sunil**; c/o Serum Institute of India Private Limited, 212/2, Off Soli Poonawalla Road, Hadapsar, Pune, Maharashtra 411028 (IN). **SHALIGRAM, Umesh**; c/o Serum Institute of India Private Limited, 212/2, Off Soli Poonawalla Road, Hadapsar, Pune, Maharashtra 411028 (IN). **GAUTUM, Manish**; c/o Serum Institute of India Private Limited, 212/2, Off Soli Poonawalla Road, Hadapsar, Pune, Maharashtra 411028 (IN). **RAO, Harish**; c/o Serum Institute of India Private Limited, 212/2, Off Soli Poonawalla Road, Hadapsar, Pune, Maharashtra 411028 (IN).

(74) Agent: **LEKUTIS, Christine** et al.; Morrison & Foerster LLP, 425 Market Street, San Francisco, California 94105 (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,

(54) Title: ACTIVE BOOSTER IMMUNIZATION AGAINST TETANUS, DIPHTHERIA AND PERTUSSIS

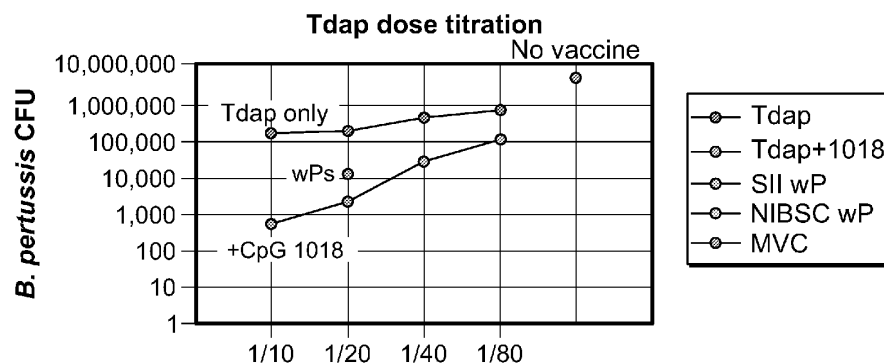


FIG. 2A

(57) Abstract: The present disclosure relates to immunogenic compositions comprising tetanus, diphtheria, and acellular pertussis (Tdap) antigens, and a toll-like receptor 9 (TLR9) agonist, such as oligonucleotide comprising an unmethylated cytidine-phospho-guanosine (CpG) motif. The immunogenic compositions may further comprise an aluminum salt adjuvant to which the Tdap antigens are adsorbed. The immunogenic compositions are suitable for active booster immunization against tetanus, diphtheria, and pertussis in an individual in need thereof.

[Continued on next page]

CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN,
KP, KR, KW, 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, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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).

Published:

- with international search report (Art. 21(3))
- with sequence listing part of description (Rule 5.2(a))