



(51) International Patent Classification:

A61K 39/09 (2006.01) C07K 14/315 (2006.01)
A61K 39/40 (2006.01) C07K 16/12 (2006.01)
C07K 4/04 (2006.01) A61P 31/04 (2006.01)

(21) International Application Number:

PCT/AU2015/050174

(22) International Filing Date:

15 April 2015 (15.04.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2014901382 15 April 2014 (15.04.2014) AU
2014903042 6 August 2014 (06.08.2014) AU
2014904453 5 November 2014 (05.11.2014) AU

(71) Applicant: **GRIFFITH UNIVERSITY** [AU/AU]; 170 Kessels Road, Nathan, Queensland 4111 (AU).

(72) Inventors: **PANDEY, Manisha**; c/- Griffith University, 170 Kessels Road, Nathan, Queensland 4111 (AU). **BATZLOFF, Michael**; c/- Griffith University, 170 Kessels Road, Nathan, Queensland 4111 (AU). **GOOD, Michael**; c/- Griffith University, 170 Kessels Road, Nathan, Queensland 4111 (AU).

(74) Agent: **FISHER ADAMS KELLY PTY LTD**; Level 29, 12 Creek Street, Brisbane, Queensland 4000 (AU).

(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).

Published:

— with international search report (Art. 21(3))

(54) Title: GROUP A STREPTOCOCCUS VACCINE

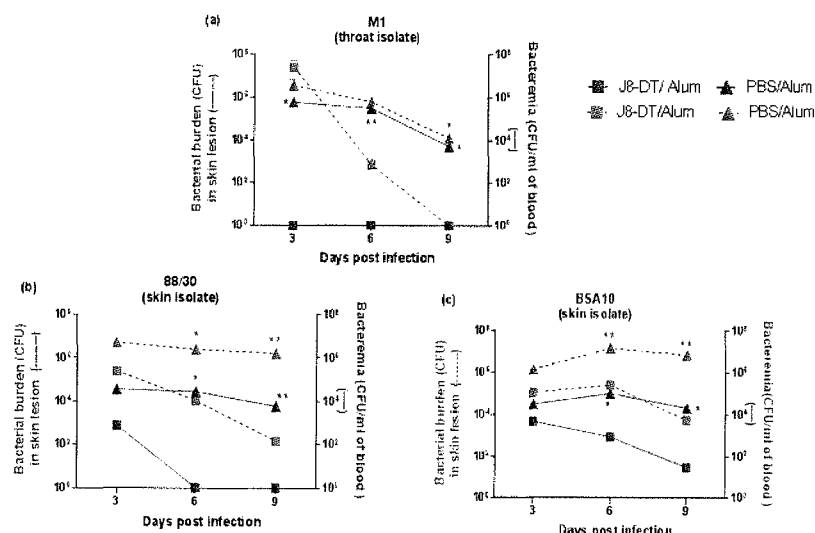


Figure 1

* p < 0.05, ** p < 0.01

(57) Abstract: A method and composition for eliciting an immune response to group A streptococcal bacteria in a mammal is provided, which includes administering to the mammal an M protein fragment, variant or derivative thereof and a SpyCEP protein or peptide fragment, or an antibody to the SpyCEP protein or fragment to facilitate restoring or enhancing neutrophil activity. Also provided is an immunodominant peptide fragment of SpyCEP.