



(51) International Patent Classification:

C12P 19/04 (2006.01) *C08B 37/00* (2006.01)
A61K 39/09 (2006.01) *C07K 14/315* (2006.01)

(21) International Application Number:

PCT/EP2015/059773

(22) International Filing Date:

5 May 2015 (05.05.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

14167448.1 7 May 2014 (07.05.2014) EP

(71) Applicant: **GLAXOSMITHKLINE BIOLOGICALS S.A.** [BE/BE]; rue de l'Institut 89, B-1330 Rixensart (BE).(72) Inventors: **BALDUCCI, Evita**; GlaxoSmithKline, Via Fiorentina 1, I-53100 Siena (IT). **BERTI, Francesco**; GlaxoSmithKline, Via Fiorentina 1, I-53100 Siena (IT). **JANULCZYK, Valdemar, Robert**; GlaxoSmithKline, Via Fiorentina 1, I-53100 Siena (IT). **MARGARIT Y ROS, Immaculada**; GlaxoSmithKline, Via Fiorentina 1, I-53100 Siena (IT). **TONIOLO, Chiara**; GlaxoSmithKline, Via Fiorentina 1, I-53100 Siena (IT).(74) Agent: **THORNLEY, Rachel, M.**; GlaxoSmithKline, Global Patents (CN925.1), 980 Great West Road, Brentford Middlesex TW8 9GS (GB).(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).

[Continued on next page]

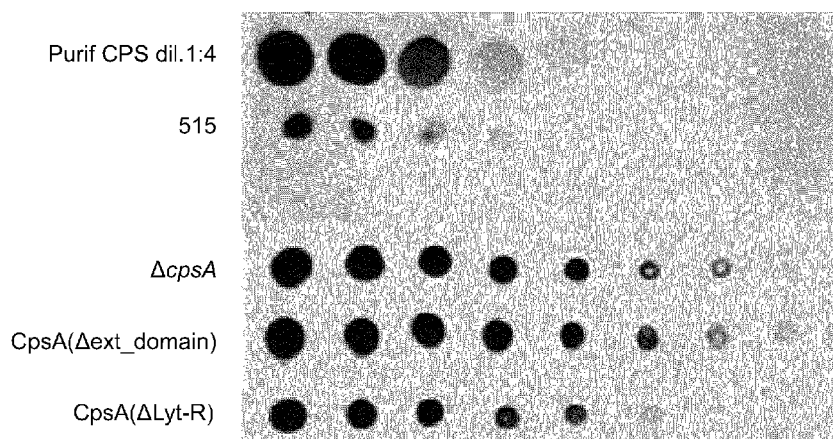
(54) Title: PURIFICATION OF SECRETED POLYSACCHARIDES FROM *S. AGALACTIAE*

Fig.1

(57) **Abstract:** The invention relates to bacterial mutants, particularly from *Streptococcus agalactiae*, in which CpsA or CpsD are mutated or deleted and that secrete capsular polysaccharide and methods of purifying the secreted bacterial capsular polysaccharides from culture medium. The extracted polysaccharides are useful for producing vaccines comprising the polysaccharides alone or conjugated to proteins.

**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:

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