

Supplementary Information

Changes in *emm* types and superantigen gene content of *Streptococcus pyogenes* causing invasive infections in Portugal

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Supplementary Table S1 – Simpson's index of diversity (SID) and respective 95% confidence intervals (CI_{95%}) for *emm* cluster, *emm* type, and superantigen (SAg) profile among 381 GAS isolated from invasive infections in Portugal during 2010-2015.

	No. partitions	SID	CI_{95%}
<i>emm</i> cluster	14	0.843	0.824-0.862
<i>emm</i> type	40	0.883	0.862-0.927
SAg profile	52	0.906	0.886-0.926

Supplementary Table S2 – SAg profiles identified among 381 GAS isolated from invasive infections in Portugal during 2010-2015.

SAg profile ^a (n)	<i>speA</i>	<i>speC</i>	<i>speG</i>	<i>speH</i>	<i>speI</i>	<i>speJ</i>	<i>speK</i>	<i>speL</i>	<i>speM</i>	<i>ssa</i>	<i>smeZ</i>
2 (8)	+	+	+	-	-	-	+	-	-	-	+
3 (11)	+	+	+	-	-	+	-	-	-	-	+
4 (1)	+	+	+	-	-	-	-	+	+	-	+
8 (25)	+	-	+	-	-	-	+	-	-	+	+
9 (6)	+	-	+	-	-	-	+	-	-	-	+
10 (96)	+	-	+	-	-	+	-	-	-	-	+
13 (2)	-	+	+	+	+	-	-	-	-	+	+
15 (1)	-	+	+	+	+	+	+	-	-	-	+
16 (17)	-	+	+	+	+	-	-	-	-	-	+
20 (15)	-	+	+	-	-	+	-	-	-	+	+
21 (2)	-	+	+	-	-	-	-	-	-	+	+
23 (17)	-	+	-	-	-	-	-	-	-	+	+
24 (9)	-	+	+	-	-	+	+	-	-	-	+
25 (13)	-	+	+	-	-	-	+	+	+	-	+
26 (6)	-	+	+	-	-	-	+	-	-	-	+
27 (9)	-	+	+	-	-	+	-	-	-	-	+
28 (2)	-	+	+	-	-	-	-	+	+	-	+
29 (47)	-	+	+	-	-	-	-	-	-	-	+
30 (3)	-	+	-	-	-	-	-	-	-	-	+
32 (4)	-	-	+	+	+	+	-	-	-	+	+
33 (13)	-	-	+	+	+	-	-	-	-	-	+
35 (1)	-	-	+	+	-	-	-	-	-	-	+
38 (3)	-	-	+	-	-	+	-	-	-	+	+
40 (3)	-	-	+	-	-	-	-	-	-	+	+
42 (2)	-	-	+	-	-	-	+	+	+	-	+
43 (2)	-	-	+	-	-	-	+	-	-	-	+
44 (6)	-	-	+	-	-	+	-	-	-	-	+
45 (2)	-	-	+	-	-	-	-	+	+	-	+
46 (6)	-	-	+	-	-	-	-	-	-	-	+
47 (2)	-	-	-	-	-	-	-	-	-	-	+
48 (1)	-	-	+	-	-	-	-	+	+	-	-
51 (10)	+	+	+	+	+	-	+	-	-	-	+
53 (8)	+	-	+	-	-	-	-	-	-	+	+
54 (1)	-	+	+	+	+	+	-	-	-	-	+
56 (1)	-	-	+	+	-	+	-	-	-	-	-
64 (1)	-	+	+	+	+	-	-	+	+	-	+
67 (1)	-	-	+	+	-	+	-	-	-	+	+
71 (1)	-	+	+	-	-	+	-	+	+	-	+
72 (5)	-	+	+	+	+	-	+	-	-	-	+
77 (2)	-	-	+	+	+	-	-	-	-	+	+
91 (1)	+	+	+	-	-	-	-	-	-	+	+
93 (1)	-	+	+	+	-	-	-	-	-	-	-
94 (1)	-	+	-	-	-	-	+	-	-	+	+
95 (3)	-	+	+	-	-	-	-	+	+	+	+

Supplementary Table S2 (continued)

SAg profile ^a (n)	<i>speA</i>	<i>speC</i>	<i>speG</i>	<i>speH</i>	<i>speI</i>	<i>speJ</i>	<i>speK</i>	<i>speL</i>	<i>speM</i>	<i>ssa</i>	<i>smeZ</i>
96 (1)	-	+	+	-	-	+	+	+	+	-	+
97 (1)	-	-	+	+	-	+	-	+	+	-	-
98 (1)	-	-	+	+	-	-	-	+	+	-	-
99 (2)	-	-	-	-	-	-	+	-	-	-	+
100 (2)	-	-	-	-	-	-	-	+	+	-	+
101 (1)	-	-	+	-	-	-	-	-	+	-	+
102 (1)	+	+	+	+	+	-	-	-	-	+	+
103 (1)	-	+	+	+	+	-	-	+	+	+	+

^a The numbering of the SAg profiles follows the one adopted previously (Friães *et al.* Eur J Clin Microbiol Infect Dis 2013, 32:115-25; Friães *et al.* Int J Med Microbiol 2013, 303:505-513; Silva-Costa *et al.* Pediatr Infect Dis J 2014, 33:306-10; Pato *et al.* Front Microbiol 2018, 9).