

DIRECT SEROTYPING OF STREPTOCOCCUS PNEUMONIAE IN BLOOD CULTURE SAMPLES BY USING A PCR REVERSE-HYBRIDIZATION TEST

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Nº P1573

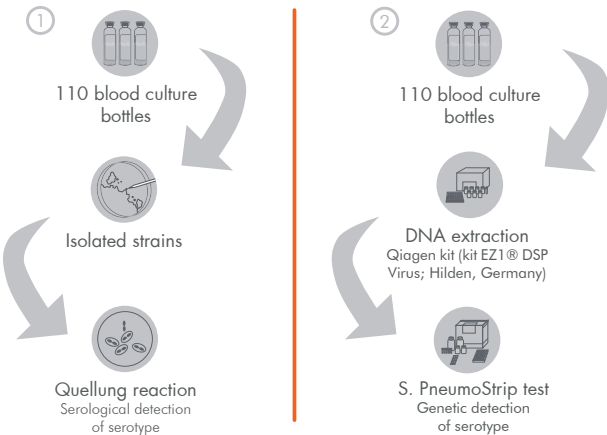


INTRODUCTION AND PURPOSE

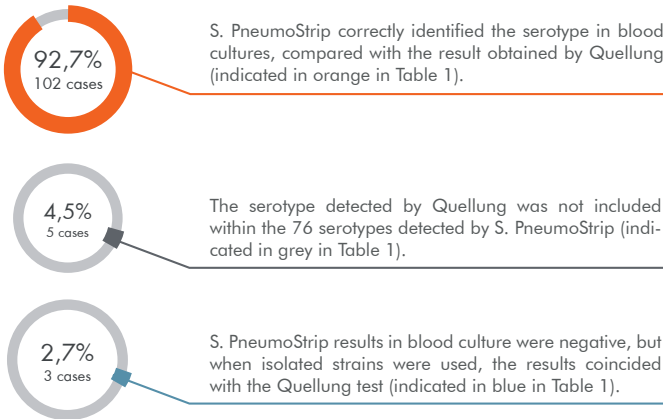
S. pneumoniae is one of the leading causes of sepsis, meningitis and respiratory disease worldwide. There are over 90 different capsular serotypes of *S. pneumoniae*. Determination of the capsular serotype of *S. pneumoniae* can provide useful information for vaccine efficacy and impact studies, as well as being a tool for understanding pneumococcal epidemiology. The Quellung reaction is the gold standard for this pneumococcal serotyping, that requires strains growing in culture. However, bacterial autolysis and empirical antibiotic therapy makes difficult, in some instances, the availability of pure colonies. The objective of this work was to assess the performance of the "S. PneumoStrip test" (Operon S.A.; Zaragoza, Spain), based on PCR followed by a reverse strip hybridization, for the detection of *Streptococcus pneumoniae* serotypes directly in blood culture bottles.



METHODS



RESULTS



S. PneumoStrip correctly identified the serotype in blood cultures, compared with the result obtained by Quellung (indicated in orange in Table 1).

The serotype detected by Quellung was not included within the 76 serotypes detected by S. PneumoStrip (indicated in grey in Table 1).

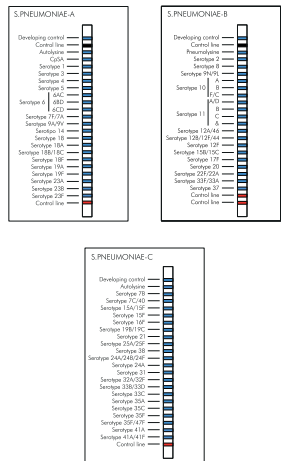
S. PneumoStrip results in blood culture were negative, but when isolated strains were used, the results coincided with the Quellung test (indicated in blue in Table 1).

Table 1: serotypes detected by Quellung and S. PneumoStrip

QUELLUNG	S. PNEUMOSTRIP
Serotype detected in strains	Serotype detected in blood cultures
8	8
3	3
128/12F	128/12F
9N	9N
15A	15A
24B	24B
23A	23A
33F/33A	33F/33A
24F	24F
4	4
10A	10A
11A	11A
16F/16A	16F/16A
22F	22F
23B	23B
6C	6C
9V	9V
35F	35F
31	31
11B	11B
19A	19A
13	none
35B	none
28F/28A	none
15A	none*
9N	none**
128/12F	none***

Serotype detected in the isolate strain: 15A *
Serotype detected in the isolate strain: 9N **
Serotype detected in the isolate strain: 12F ***

Graphic 1: control strips for the identification of serotype with S. Pneumoniae



CONCLUSIONS

PneumoStrip test is a good alternative technique for direct pneumococcal serotyping in blood culture clinical samples. Its use in culture negative clinical samples needs to be further investigated.

Disclosure: Ms. Ruth de Luis and Ms. Susana del Río; OPERON S.A. (Zaragoza, SPAIN)

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