Introduction: The European Committee on Antimicrobial Susceptibility Testing (EUCAST) Rapid Antimicrobial Susceptibility Testing (RAST) method has recently made rapid blood culture reporting possible for 8 common organisms (*Staphylococcus aureus*, *Streptococcus pneumoniae*, *Enterococcus faecalis/faecium*, *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii*).^{1,2} The implementation of this method was evaluated over a 6-month period.

Method: Eligible blood culture isolates that flagged positive within an appropriate timeframe were set up using the EUCAST RAST method. AST results were confirmed at 16–20 hours using Vitek2.

Result: Forty-seven significant isolates flagged within an appropriate timeframe. Thirty (64%) were validated organisms in pure culture, of which 20 (67%) had reportable AST on the same day [4 (20%) at 4 hours, 13 (65%) at 6 hours, 3 (15%) at 8 hours]. For one, this changed treatment from an ineffective antibiotic, with identification of a vancomycin resistant *E. faecium*. There was 100% concordance vs Vitek2 (with no false susceptibility).

Conclusion: Implementing the EUCAST RAST method was easy and effective in the private laboratory setting, providing earlier identification of resistance and antimicrobial guidance in a significant proportion of blood culture isolates. The expected expansion of the method to include 8–12 hour breakpoints in the near future is likely to facilitate an even greater number of isolates reported early.

References

- Jonasson E, Matuschek E, Kahlmeter G. The EUCAST rapid disc diffusion method for antimicrobial susceptibility testing directly from positive blood culture bottles. *J Antimicrob Chemother* 2020; 75: 968–78.
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FALSE POSITIVE RESULTS SEEN AT HIGH CT VALUES WITH THE XPERT XPRESS SARS-COV-2 TEST

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From early-2020 to mid-2021, Singapore had very low community prevalence of SARS-CoV-2. During this time, there were several high CT results with the Xpert Xpress SARS-CoV-2 PCR test in our laboratory from low epidemiological risk patients, who were negative on repeat testing. This raised concerns that such results could be false positive.

We reviewed all initial positive high CT (CT >34) Xpert results obtained in our laboratory during this time. We categorised these results into likely true or false positive based on the test order indication and the patient's other SARS-CoV-2 PCR test results. 146/36596 (0.40%) results were positive. 81/146 were initial positive CT >34 results, with 50/81 likely false positive following review. All 50 likely false positive results were CT >38, though we noted that 21 likely true positive results were

also CT >38. In this low prevalence setting, 0.15% of all results, 34.3% of positive results, and 70.4% of results with CT >38 were false positive. In view of these findings, we suggest treating CT >38 Xpert results with caution, interpreting such results in the context of the patient's clinical status, epidemiological risk, and other test results.

RELIABLE DETECTION OF MRSA BACTERAEMIA BY 4-HOUR CEFOTAXIME DISC DIFFUSION

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Methicillin susceptibility for *Staphylococcus aureus* blood culture isolates can be determined in 4 hours by cefotaxime disc diffusion using undiluted blood culture broth applied to Mueller-Hinton agar (MH) using a cotton swab. In 2020 a European Committee on Antimicrobial Susceptibility Testing (EUCAST) working group showed 58% of isolates were interpretable by this technique after 4 hours of incubation.¹ We sought to increase the number of interpretable results by using Mueller-Hinton agar with sheep blood (MHSB) incubated at 35°C in air, and reading the zone of inhibition by reflected rather than transmitted light. 127 positive blood culture bottles were analysed in line with usual workflow, including 52 simulated using historical MRSA bloodstream isolates. 114/118 (96.6%) samples were interpretable after 4 h ± 5 min incubation. All uninterpretable isolates were simulated bottles. All 109 samples assessed after 6 h incubation were interpretable. There was complete separation of MRSA and MSSA at both timepoints, with no significant inter-observer differences. Using the breakpoints proposed by the EUCAST group, no errors were encountered. MHSB seems to support more rapid growth of *S. aureus* and using MHSB read by reflected light allows more reliable return of results for this cheap, simple technique. Vancomycin-associated costs and harm could be reduced by adopting this technique.

Reference

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DISCORDANT SARS-COV-2 RNA RESULTS OBTAINED USING THE ROCHE COBAS LIAT SARS-COV-2

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Between 05/08/2021 and 04/11/2021 NSW Health Pathology (NSWHP) has been collating data regarding discordant SARS-CoV-2 RNA results obtained using the Roche cobas Liat SARS-CoV-2. Over this time approximately over 120,000 Liat SARS-CoV-2 assays were performed across NSWHP sites, with 6227 (~5%) of samples testing positive. Seventy (0.06%) discordant results for SARS-CoV-2 RNA were recorded when the result obtained on the Liat assay was compared to the result obtained on an alternative platform using the same sample.

Discordant results were investigated by retesting the initial sample, clinical follow-up, obtaining a new collection and if needed, serological confirmation. Liat Ct values were obtained for all discordant results.

Of the 70 discordant results 21/70 (30%) were deemed 'true positives' as identified on the Liat, 2/70 (3%) were false negative and 20/70 (29%) were false positives. There were 27 cases where

there was insufficient data to allow classification as either false positive or true positive.

Overall, the false positive rate for the Liat in the experience of NSWHP was between 0.04–0.09% (accounting for the unclassified cases). This false positive rate is significantly lower than that reported in recent literature.