Implementation of the EUCAST method for rapid antimicrobial susceptibility testing (RAST) directly from positive blood culture bottles using designated breakpoints

Before implementing the EUCAST RAST method, consider the following:

1. The EUCAST RAST method is developed for disk diffusion directly from positive blood culture bottles and is calibrated to broth microdilution MICs.

2. To implement RAST, identify a “champion” among laboratory staff to take responsibility for and be the lead person during the whole implementation process.

3. Results can only be interpreted using the designated RAST breakpoint table organized according to species and reading time (4, 6 and 8 hours). Do not attempt to use the regular breakpoint table! Read plates within ± 5 minutes of the stipulated reading times. If a plate cannot be read after 4h (or 6h), re-incubate the plate within 10 minutes. Do not incubate plates beyond 8 hours.

4. Read inhibition zones from the front of the plate after removing the lid and ONLY when growth is confluent and zone edges are clearly visible. Otherwise incubate for another 2 hours up to 8 hours. Do not read plates beyond 8 hours.

5. The identity of the species must be known prior to interpretation of RAST results since interpretation is specific for each species. Do not attempt interpreting results for other species than those for which the system was developed and validated.

6. A result in the Area of Technical Uncertainty (ATU) should be revisited: re-incubate the plate for another 2 hours up to a maximum of 8 hours. If the result cannot be interpreted after 8 hours incubation, retest with EUCAST standard disk diffusion.

7. To facilitate the implementation of the method, EUCAST has developed criteria (targets and ranges) for QC strains. Process the strains through the entire system (inoculate bottles, incubate bottles in the blood culture instrument, inoculate plates once a positive growth signal is obtained) and read zone diameters after 4, 6 and 8h of incubation. Test these strains when implementing the method, when training new staff, following a change in blood culture system or any other change to the system. Otherwise perform internal QC using standard criteria to control AST materials and equipment used for AST.

8. If you have questions do not hesitate to contact EUCAST Development Laboratory (see www.eucast.org).