

Division of Laboratory Medicine

Bacteriology

Antimicrobial Susceptibility Test (AST)

General information

Antimicrobial susceptibility tests are performed using disc diffusion (EUCAST and BSAC methods), Gradient strip (Etest) and Broth Microdilution (BMD) using VitekXL systems (Biomérieux, UK) to establish the antibiotic options available for an identified organism.

AST are performed on bacterial and fungal isolates from a variety of clinical specimens.

Laboratory information

Measurement units: ETest & Vitek AST: MIC (Minimum Inhibitory Concentration)

Disc diffusion: zone sizes in mm

Reported in qualitative terms as:

(S) Sensitive

(I) Susceptible at increased exposure

(R) Resistant

Biological reference units:

MIC: ug/L

Turnaround time for provisional result (working days): 1-2 days

Turnaround time to final result (working days): Usually 3-4 days

Slow growing species e.g. Tb and species that are referred to reference centres will take longer

Clinical information

Clinical decision points: Clinical information relating to the sample site, sample type, PMH, previous antimicrobial therapy, current antimicrobial therapy, underlying immune status of the patient, travel history (including hospital stays abroad), presence of indwelling or prosthetic material will all influence the whether AST are performed and the panel of antimicrobials tested.

Factors known to significantly affect the results: Delayed results may occur when the bacteria / fungi isolated is slow growing.

Isolates referred to reference units for specialist AST e.g. Actinomyces, Tb will take considerably longer, Medical Microbiologists will provide advice.

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Multi drug resistant isolates with limited treatment options may undergo secondary AST, Medical Microbiologists will provide advice.

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