

ORGANISM FACT SHEET

Haemophilus spp.

OFS006

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***Haemophilus* spp.:** Gram negative, fastidious cocco-bacilli. Require CO₂ for growth. Encapsulated strains more virulent. Other species include *H. parainfluenzae*, *H. ducreyi*, *H. aegypticus*.

Infections

- Encapsulated strains: meningitis, pericarditis, pneumonia, bacteremia, and osteomyelitis.
- Non-encapsulated strains: pneumonia, chronic bronchitis and otitis media.

Antibiotic resistance

- Ampicillin resistance via β -lactamase production seen in 1972.
- PBP related (non- β -lactamase) ampicillin resistance (BLNAR) emerged in 1980, low level resistance.
- Resistance to chloramphenicol, macrolides, trim/sulfa on the increase.
- Co-resistance to both chloramphenicol and ampicillin reported.

Susceptibility testing needs

- Respiratory infections of the lung, middle ear, nasopharynx and eye.
- MICs on isolates from neutropenic patients and sterile site specimens e.g. blood, CSF and middle ear fluid.

Methods

Disc diffusion

- May miss low level BLNAR.
- Growth rates for *Haemophilus* spp. can vary significantly and may affect zone sizes irrespective of susceptibility.

Microdilution and automated systems

- Commercial panels require growth supplements.
- Do not support good growth of fastidious organisms like *Haemophilus influenzae*.
- Low inoculum is inferior for detection of low level BLNAR.
- Contamination problems.
- Not applicable for automated systems.

Agar dilution

- Cumbersome and expensive to set up and maintain as a routine.

Etest

- Agar based system/CO₂ incubation optimal for growth of *Haemophilus* spp.
- Macromethod that detects low level resistance.
- Good correlation with reference methods.
- Cost effective for MIC testing of 3-5 drugs in critical infections.