

7. STREPTOCOCCUS PNEUMONIAE

MH-F agar (MH agar +5% defibrinated horse blood + 20 mg/l beta-ND), McFarland 0.5, incubation 5% CO₂ at 35°C ± 1°C, incubation time 18h ± 2 h.

QC strain: *Streptococcus pneumoniae* ATCC 49619.

• STANDARD PANEL (all specimen types)

PRIMARY TESTING	SUGGESTED REPORTING ¹ (NON MENINGITIS)	SUGGESTED REPORTING (MENINGITIS)
Oxacillin ² .	Penicillins, cephalosporins, meropenem.	Third and fourth generation cephalosporins, penicillins, meropenem ⁶ .
Erythromycin.	+	
Clindamycin ³ .	+	
Tetracycline ⁴ .	+	
Cotrimoxazole.	+	

SUPPLEMENTAL TESTING	SUGGESTED REPORTING ¹ (NON MENINGITIS)	SUGGESTED REPORTING (MENINGITIS)
Levofloxacin ⁵ , moxifloxacin ⁵ .		
Ampicillin ² or amoxicillin ² .	+	
Cefotaxime ² , ceftriaxone ² , cefepime ² .	+	+
Meropenem ² .		+ ⁶
Teicoplanin or vancomycin.		+ ⁶
Rifampicin.		+ ⁶

- Reporting in infection other than meningitis may depend on type of infection/site considered (systemic infection with positive blood cultures versus upper or lower respiratory tract infection).
- Screening with oxacillin disk for betalactam susceptibility.**
 - Isolates with zones ≥ 20 mm** are considered susceptible to penicillins and to all betalactam antibiotics (except cefaclor).
 - Isolates with zones <20 mm.**
 - Report resistant to benzylpenicillin (penicillin G) in case of meningitis and to penicillin V for all indications.
 - If oxacillin zone ≥ 8 mm: for infections other than meningitis, betalactam antibiotics [ampicillin, amoxicillin and piperacillin (both without or with a betalactamase inhibitor)], cefepime, cefotaxime, and ceftriaxone may be reported as susceptible without further testing.
 - If oxacillin zone < 8 mm and in case of meningitis, always confirm by determining the MIC to the agents considered for use in the clinic (ceftriaxone, cefotaxime, cefepime, meropenem) and interpret according to adapted clinical breakpoints.
- Inducible clindamycin resistance can be detected by antagonism of clindamycin activity by a macrolide agent.
- Higher intrinsic activity of minocycline and doxycycline versus tetracycline (minocycline may be the preferred tetracycline drug for testing against *Streptococcus pneumoniae*).
- Susceptibility to levofloxacin and to moxifloxacin may be inferred by screening with a norfloxacin disk. Isolates categorized as norfloxacin non susceptible should be tested for susceptibility to individual agents.
- Reporting of results to meropenem, glycopeptides and rifampicin in meningitis may be indicated only in the setting of meningitis due to a *Streptococcus pneumoniae* strain resistant to third generation cephalosporins (ceftriaxone/cefotaxime) isolate which is extremely rare in Belgium.