Pseudomonas spp - other than P aeruginosa (LTR81914)

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Organism

Pseudomonas spp. (other than P. aeruginosa)

- *P. alcaligenes*
- *P. fluorescens*
- *P. luteola*
- *P. mendocina*
- *P. monteilii*
- *P. mosseilii*
- *P. oryzihabitans*
- *P. putida*
- *P. pseudoalcaligenes*
- *P. stutzeri*
- *P. veronii*

Clinical

These organisms are found in a variety of environmental sources, especially aqueous environments. Many species are plant pathogens. They are considered to be of low virulence. They have, however, been associated with nosocomial bacteremia and may cause a variety of infections (endocarditis, meningitis, wound infections, cellulitis, abscesses, pneumonia) in the immunocompromised patient. They may also cause pulmonary infections in cystic fibrosis patients.

- ***P. putida*** – has been associated with catheter related sepsis in immunocompromised patients, septic arthritis and bacteremia from transfused blood.
- ***P. fluorescens*** – associated with both true bacteremia (associated with contaminated catheters, catheter related devices and contaminated blood products) and pseudobacteremia.
- ***P. stutzeri*** – is ubiquitous in soil and water environments. It has rarely been associated with otitis media, conjunctivitis, pneumonia, septic arthritis, endocarditis, meningitis (HIV patients), prosthetic material related infections, osteomyelitis and traumatic wound infections.
- ***P. mendocina*** – has been associated with prosthetic valve endocarditis and septicemia in immunocompromised patients.
- ***P. alcaligenes*** – its pathogenic potential is uncertain, but has been associated with ocular infections, empyema and endocarditis.
- ***P. luteola*** – has been associated with bacteremia, endocarditis, meningitis, leg ulceration, osteomyelitis and peritonitis.
- ***P. oryzihabitans*** – has been recovered from multiple clinical sites (wounds, ears, sputum, eye, urine, peritoneal fluid, blood). Has been associated with intravascular catheter associated infections and CAPD peritonitis. Risk factors for infection include transplant recipients, intravenous drug use, prosthetic material (esp. vascular grafts, intravenous catheters) and post-traumatic head injury.

Pseudomonas spp. (other than P. aeruginosa), Continued

Usual susceptibility pattern

These organisms are resistant to narrow spectrum penicillins and cephalosporins but are usually susceptible to aminoglycosides, TMP-SMX (except most *P. fluorescens/putida* isolates), quinolones, and extended spectrum beta-lactam agents.
P. stutzeri is usually very susceptible to all antipseudomonal antibiotics. MDR isolates mainly due to MBL-mediated carbapenem resistance have been reported.

Susceptibility method

VITEK2 or Etest method using Mueller-Hinton agar incubated in ambient air at 35°C for 16-20 hours (48 hours if slow grower). Recommend Etest method for mucoid strains.

Note: For Etest use 0.5 McFarland suspension in saline.
For mucoid strains use 1.0 McFarland.

Susceptibility reporting

	CSF/ Brain	Blood/ Sterile Body Site	Urine	Other	Comments
Ceftazidime	✓	✓	✓	✓	
Ciprofloxacin		✓	✓	✓	Do not report if patient < 18 y If patient < 18 y **see Special Considerations**
Gentamicin		✓*	✓	✓*	*If gent MIC = 4.0 µg/mL **see Special Considerations**
Imipenem *		2	2	2	Always report if I/R 2nd line if pip/tazo and ceftaz I/R If imi I/R **see Special Considerations**
Meropenem	✓	2	2	2	Always report if I/R 2nd line if pip/tazo and ceftaz I/R If mero I/R **see Special Considerations**
Piperacillin/ tazobactam		✓	✓	✓	
TMP-SMX	*	✓	✓	✓	*Physician request only after consultation with microbiologist. Do not report if patient <2 months
Tobramycin		✓*	✓	✓*	*If tobra MIC = 4.0 µg/mL **see Special Considerations**

* Do NOT report Imipenem from the VITEK

Pseudomonas spp. (other than P. aeruginosa), Continued

Special considerations

Ciprofloxacin:	Ciprofloxacin may be reported in patients < 18 years of age on physician request. Add comment: "Susceptibility testing requested by physician." #STRBP
Gentamicin/ Tobramycin:	Organisms testing at upper limit of susceptibility (4µg/mL) may not achieve optimal pharmacokinetics/pharmacodynamics. For **non-urine** isolates: If MIC 4.0 µg/mL add comment: "This isolate tests at the upper limit of susceptibility for gentamicin. Clinical failure may occur despite in vitro susceptibility". #A312 **or** "This isolate tests at the upper limit of susceptibility for tobramycin. Clinical failure may occur despite in vitro susceptibility". #A313 **or** "This isolate tests at the upper limit of susceptibility for both gentamicin and tobramycin. Clinical failure may occur despite in vitro susceptibility". #A314
Imipenem/ Meropenem:	Resistance mechanisms for imipenem and meropenem may differ. Susceptibility or resistance to one does not necessarily predict susceptibility or resistance to the other. These antibiotics should be tested separately by a MIC method.
	Consult microbiologist if I/R.

Interpretation

For Etest, report actual MIC result. For interpretation (S, I, or R) report according to the nearest higher doubling dilution **(Appendix 1)**.

Use **CLSI** interpretive document for **Other Non-Enterobacterales.**