Enterobacterales - other (LTR62257)

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Organism **Enterobacterales (other)**

Budvicia sp.	This organism is thought to be an environmental organism. It may be recovered from clinical specimens where clinical significance is to be determined.
Buttiauxella spp.	These organisms have been isolated from environmental specimens (water, soil). A pathogenic role has not been established. *B. noakiae* has been isolated from human clinical specimens.
Erwinia spp.	These organisms colonize plants. One case of urinary tract infection has been attributed to this organism. These organisms produce a chromosomal extended spectrum beta-lactamase (ESBL) and are usually resistant to ampicillin and first/second generation cephalosporins. Third generation cephalosporins may test susceptible, but should be reported as resistant.
Ewingella spp.	This organism has been associated rarely with respiratory infections, wound infections, peritonitis, conjunctivitis, and bacteremia in hospitalized patients. These organisms produce a chromosomal extended spectrum beta-lactamase (ESBL) and are usually resistant to ampicillin and first/second generation cephalosporins. Third generation cephalosporins may test susceptible, but should report as resistance.
Kluyvera spp.	These organisms are isolated from environmental sources, food products of animal origin, soil, floors, sewage and hospital environments. It is considered an opportunistic pathogen and has been associated with nosocomial infections (bacteremia, mediastinitis), as well as urinary tract (pyelonephritis) and soft tissue infections. It may be misidentified as *E.coli*. These organisms produce a chromosomal extended spectrum beta-lactamase (ESBL) and are usually resistant to ampicillin and first/second generation cephalosporins. Third generation cephalosporins may test susceptible, but should be reported as resistant.
Leclercia spp.	This organism has been recovered from the environment and from a variety of clinical sources (blood, urine, stool, sputum, wounds). It has been associated with infections in immunocompromised patients, (septicemia, peritonitis, septic arthritis, urinary tract infections). It is generally susceptible to aminoglycosides, TMP-SMX, tetracyclines, quinolones and beta-lactam antibiotics.
Moellerella spp.	This organism has been isolated from environmental sources. It has been recovered from stool, gallbladder, and respiratory specimens. A pathogenic role has not been established. Biochemically similar to *Providencia spp.,* this organism is susceptible to doxycycline, aminoglycosides, quinolones, TMP-SMX, nitrofurantoin and most beta-lactam antibiotics.

Enterobacterales (other), Continued

Organism (continued)

Photorhabdus spp.	These organisms are recognized as important insect pathogens. *Photorhabdus* spp. is emerging as a cause of both localized soft tissue and disseminated infections in humans.
Rahnella spp.	This organism is isolated from water sources and has been associated with nosocomial and opportunistic infections (bacteremia, urinary tract, wound infections). These organisms produce a chromosomal extended spectrum beta-lactamase (ESBL) and are usually resistant to ampicillin and first/second generation cephalosporins. Third generation cephalosporins may test susceptible but should be reported as resistant.
Tatumella spp.	This organism has been recovered from a variety of human specimens (sputum, throat, urine, blood, stool). A pathogenic role has not been established.
Yokenella spp.	This organism is associated with the flora of various insects. It has been recovered from a variety of clinical specimens (respiratory tract, wounds, urine, stool). A pathogenic role has not been established. Biochemically similar to *Hafnia spp.*

Usual susceptibility pattern

The antimicrobial susceptibility patterns for these organisms have not been well established. All susceptibility testing and reporting should be done in consultation with a microbiologist.

Susceptibility method

VITEK2 (*Ewingella, Kluyvera* and *Leclercia* spp. only). Additional tests (Disc diffusion or Etest method) are performed using Mueller-Hinton agar incubated in ambient air at 35°C for 16-20 hours.

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

Enterobacterales (other), Continued

Susceptibility reporting

	CSF/ Brain	Blood / Sterile Body Site / Endovascular Catheter	Other	Comments
Ceftriaxone	✓	✓	✓	**See Special Considerations** If patient < 1 mo - report cefotaxime instead of ceftriaxone using the same interpretation.
Ciprofloxacin		✓	✓	Do not report in patients < 18 y
Ertapenem		2	2	2nd line if CRO I/R If S do not report in patients < 3 months
Gentamicin	*	✓	✓	* Report only in neonates (< 1 month) **See Special Considerations**
Imipenem *		2	2	2nd line if CRO I/R
Meropenem	✓	2	2	2nd line if CRO I/R
Tetracycline			*	*Report only at physician request Do not report in patients < 8 y
TMP-SMX		✓	✓	
Tobramycin		2	2	2nd line if gent I/R **See Special Considerations**

* Do NOT report Imipenem from the VITEK

Note: Antibiotic drugs listed in the susceptibility reporting table are for consideration only. Please consult microbiologist regarding clinical significance and the need for susceptibility testing.

On all isolates where susceptibility results are reported, at microbiologist discretion, add comments:

"This organism is found in environmental sources, but may be an opportunistic pathogen. Clinical correlation required". &A289

"Antimicrobial susceptibility for this organism has not been established. Results are probable but not definite". &A290

Enterobacterales (other), Continued

Special considerations

Ceftriaxone:	For *Erwinia, Ewingella, Kluyvera* and *Rahnella species,* report ceftriaxone as **R** as these species have a chromosomal extended spectrum beta-lactamases. For other species, consult microbiologist.
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

Interpretation

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

Use **CLSI** interpretive document for **Enterobacterales**

For Beta-lactam drugs for *Erwinia, Kluyvera* and *Rahnella* spp. – Refer to Beta-lactam Resistance Detection Charts.
For gentamicin and tobramycin – Refer to Special Considerations