# Capnocytophaga spp (LTR79373)

**Edit Approved By: Dragan, Tatiana (07/25/2023)** **Revision: 4.10**

**Organism**

**Capnocytophaga spp.**

**Human**

- *C. gingivalis*
- *C. granulosa*
- *C. haemolytica*
- *C. ochracea*
- *C. sputigena*

**Canine**

- *C. canimorsus*
- *C. cynodegmi*

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**Clinical**

Capnocytophaga species are part of the normal oral oropharyngeal flora of humans and animals (dogs and occasionally cats) and are considered opportunistic pathogens.

Species that colonize the human oral cavity have been implicated in periodontal disease and have been associated with intrauterine infections, amnionitis, and neonatal infections in premature infants. They may also cause septicemia in immunocompromised individuals. Rarely, these organisms have been associated with endocarditis, peritonitis, deep abscesses, septic arthritis, osteomyelitis, and ocular infections in both immunocompromised and immunocompetent individuals.

Species that are part of the normal oral flora of dogs (occasionally cats and rabbits) cause infections in association with bites or close contact. Septicemia may range from mild in healthy individuals to fulminant in immunocompromised/debilitated or high risk (asplenic, alcoholism, steroid therapy) individuals. Fulminant septicemia resembles meningococcal disease. Other infections associated with these organisms include meningitis, endocarditis, pneumonia, cellulitis, septic arthritis, and ocular infections.

## **Capnocytophaga spp.,** Continued

**Usual susceptibility pattern**

These organisms are usually susceptible to amoxicillin-clavulanate, clindamycin, tetracycline, quinolones and carbapenems (rare resistance has been reported to clindamycin, ciprofloxacin and tetracycline). Susceptibility to penicillins and cephalosporins is variable due to beta-lactamase production. Chromosomal and plasmid mediated β-lactamases have been described. These include cefuroximases (cfxA2 and cfxA3) which confer resistance to a broad range of β-lactams including 3rd generation cephalosporins. Carbapenems retain activity. Resistance to erythromycin is increasing. These organisms are usually resistant to aminoglycosides, vancomycin, colistin and TMP-SMX. The activity of metronidazole is controversial.

The susceptibility data for *C. canimorsus* and *C. cynodegmi* is limited but is similar to that of human *Capnocytophaga* spp. except that there are no reports of beta lactamase-producing *C. canimorsus*.

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**Susceptibility method**

Etest method using Laked Blood Agar incubated in 5% $CO_2$ at 35°C for 48 hours.

**Note**: For Etest use 1.0 McFarland suspension in broth.

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**Susceptibility reporting**

| | CSF/ Brain | Blood/ Sterile Body Site | Other | Comments |
|---|---|---|---|---|
| β-lactamase | * | * | * | Test but do not report |
| Amoxicillin-clavulanate | | | ✓ | |
| Ampicillin | ✓ | ✓ | ✓ | If β-lactamase positive – report amp R<br>If amp S and ceftriaxone non-susceptible consult microbiologist |
| Ceftriaxone | ✓ | ✓ | 2 | 2nd line if amp R |
| Ciprofloxacin | | ✓ | ✓ | Do not report in patients < 18 y |
| Doxycycline | | | ✓ | If patient <8 y see **Special Considerations** |
| Meropenem | ✓ | 2 | | 2nd line if ceftriaxone non-susceptible |

**Special consideration**

| | |
|---|---|
| Doxycycline: | If patient < 8 y add comment:<br>"Doxycycline can now be prescribed for children <8y for short-course (<21d) therapy: OTHER tetracyclines are still contraindicated for this age group." **(25)** |

**Interpretation**

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

<table>
<tr><th>Antibiotic</th><th>Interpretive document</th><th>Add comment</th></tr>
<tr><td>Amoxicillin/clavulanate</td><td>CLSI: Pasteurella spp.<table><tr><th>MIC</th><th>Interpretation</th></tr><tr><td>≤ 0.5/0.25 µg/mL</td><td>Susceptible</td></tr><tr><td>≥ 1/0.5 µg/mL</td><td>Non-susceptible *</td></tr></table></td><td rowspan="6">Susceptibility testing for this organism was performed by a non-reference method and/or required modifications to the standard test conditions. Results are probable but not definite.<br>&2130 &2338</td></tr>
<tr><td>Ampicillin</td><td>EUCAST: Pasteurella multocida<table><tr><th>MIC</th><th>Interpretation</th></tr><tr><td>≤ 1 µg/mL</td><td>Susceptible</td></tr><tr><td>≥ 2 µg/mL</td><td>Resistant</td></tr></table></td></tr>
<tr><td>Ceftriaxone</td><td>CLSI: Pasteurella spp.<table><tr><th>MIC</th><th>Interpretation</th></tr><tr><td>≤ 0.12 µg/mL</td><td>Susceptible</td></tr><tr><td>≥ 0.25 µg/mL</td><td>Non-susceptible *</td></tr></table></td></tr>
<tr><td>Ciprofloxacin</td><td>EUCAST: Pasteurella multocida<table><tr><th>MIC</th><th>Interpretation</th></tr><tr><td>≤ 0.06 µg/mL</td><td>Susceptible</td></tr><tr><td>≥ 0.12 µg/mL</td><td>Resistant</td></tr></table></td></tr>
<tr><td>Doxycycline</td><td>EUCAST: Pasteurella multocida<table><tr><th>MIC</th><th>Interpretation</th></tr><tr><td>≤ 1 µg/mL</td><td>Susceptible</td></tr><tr><td>≥ 2 µg/mL</td><td>Resistant</td></tr></table></td></tr>
<tr><td>Meropenem</td><td>CLSI: Haemophilus spp.<table><tr><th>MIC</th><th>Interpretation</th></tr><tr><td>≤ 0.5 µg/mL</td><td>Susceptible</td></tr><tr><td>≥ 1 µg/mL</td><td>Non-susceptible *</td></tr></table></td></tr>
<tr><td colspan="3">*Consult Microbiologist prior to reporting non-susceptible result.</td></tr>
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