**ONLY ZOETIS OFFERS A DIVERSE RANGE OF ANTIMICROBIALS TO MATCH YOUR BRD CHALLENGES.**

When you’re dealing with bovine respiratory disease (BRD), antimicrobial selection can be overwhelming. With so many products — offering different indications, durations and withdrawal times — which one is right for your operation?

Zoetis makes it simple with the most comprehensive and versatile antimicrobial portfolio available, including products with:

- Three different classes to destroy BRD bacteria in three different ways
- Treatment and control options
- The shortest withdrawal times for greater flexibility at different production stages

### Table of Antimicrobials

<table>
<thead>
<tr>
<th>Product</th>
<th>Active Ingredient</th>
<th>Class</th>
<th>BRD Control Indications</th>
<th>BRD Treatment Indications</th>
<th>Dosage and Route of Administration</th>
<th>Maximum Amount Per Site</th>
<th>Estimated Duration</th>
<th>Meat Withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Draxxin</strong></td>
<td>Enrofloxacin</td>
<td>Macrolide</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>6 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>14 days</td>
<td>7-14 days</td>
</tr>
<tr>
<td><strong>Excede</strong></td>
<td>Cefquinome</td>
<td>Cephalosporin</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>6 mL/cwt/IM in the neck, and repeat after 48 hours</td>
<td>10 mL</td>
<td>15 days</td>
<td>7 days</td>
</tr>
<tr>
<td><strong>Advocin</strong></td>
<td>Florfenicol</td>
<td>None</td>
<td>M. haemolytica and P. multocida</td>
<td>M. haemolytica and P. multocida</td>
<td>6 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>12 days</td>
<td>4 days</td>
</tr>
<tr>
<td><strong>Micotil</strong></td>
<td>Tilmicosin</td>
<td>Macrolide</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>1.5–3.0 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>42 days</td>
<td>---</td>
</tr>
<tr>
<td><strong>Nuflox</strong></td>
<td>Florfenicol</td>
<td>None</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>6 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>28 days</td>
<td>7 days</td>
</tr>
<tr>
<td><strong>Nuflox Gold</strong></td>
<td>Florfenicol</td>
<td>None</td>
<td>Not approved for control of BRD</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>6 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>---</td>
<td>64 days</td>
</tr>
<tr>
<td><strong>Resflo Gold</strong></td>
<td>Florfenicol and Bimane</td>
<td>None</td>
<td>Not approved for control of BRD</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>6 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>---</td>
<td>30 days</td>
</tr>
<tr>
<td><strong>Zuprevo</strong></td>
<td>Tilmicosin</td>
<td>Macrolide</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>1.0 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>20 days</td>
<td>21 days</td>
</tr>
<tr>
<td><strong>Zactran</strong></td>
<td>Sarfloxacin</td>
<td>Macroline</td>
<td>M. haemolytica and P. multocida</td>
<td>M. haemolytica and P. multocida</td>
<td>6.6–7.7 mL/cwt/SC in the neck</td>
<td>10 mL</td>
<td>10 days</td>
<td>35 days</td>
</tr>
<tr>
<td><strong>Baytril</strong></td>
<td>Enrofloxacin</td>
<td>None</td>
<td>M. haemolytica, P. multocida, and H. somni</td>
<td>Not indicated for M. haemolytica, P. multocida, and H. somni</td>
<td>3.4–5.7 mL/cwt/SC in the neck</td>
<td>20 mL</td>
<td>---</td>
<td>26 days</td>
</tr>
</tbody>
</table>

### Important Safety Information

**Important Safety Information for Draxxin: Draxxin has a pre-slaughter withdrawal time of 18 days. Do not use in female dairy cattle 20 months of age or older. Do not use in animals used to be hypersensitive to the product. See full Prescribing Information, on reverse side.**

**Important Safety Information for Excede**: People with known hypersensitivity to penicillin or cephalosporins should avoid exposure to EXCEDE. EXCEDE is contraindicated in animals with known allergy to ceftriaxone or to the β-lactam group (penicillins and cephalosporins) of antimicrobials. Inadvertent intra-arterial injection is possible and fatal. Do not use in calves to be processed for veal.

**Important Safety Information for Advocin**: Extra-label use of ADVOCIN in food-producing animals is prohibited. Do not use in cattle intended for dairy production or in calves to be processed for veal. ADVOCIN has a pre-slaughter withdrawal time of four days.

See full Prescribing Information, on reverse side.

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**References**

**Hemophilus parasuis, M. bovis, Mycoplasma bovis, and Fusobacterium necrophorum**

**Dosage and Administration**

**Administration for the Base of Ear:** Toward the same eye technique or rostral direction.

**Drug Administration** (treatment) in cattle at high risk.

**Dosage**

- **Immunocompromised Suckling Calves, Dairy Calves, and Veal Calves:**
  - Infants:
    - Less than 250 lbs: 3 mg/dose
    - 250 lbs to 440 lbs: 6 mg/dose
    - 440 lbs and above: 9 mg/dose
  - Young calves:
    - Less than 50 lbs: 0.3 mg/kg
    - 50 lbs to 100 lbs: 0.5 mg/kg
    - 100 lbs and above: 0.7 mg/kg

**Drug Administration** (treatment) in cattle at high risk.

**Route of Administration:** Subcutaneous injection.

**Dosage Volume**

- 50 lbs: 1 mL
- 100 lbs: 2 mL
- 200 lbs: 5 mL

**Injection**:

- The drug should be administered in the middle third of the body, as evidenced by a steady state volume of distribution (Vdss) in cattle.

**Dosage for Suckling Calves, Dairy Calves, and Veal Calves**

- Infants:
  - Less than 250 lbs: 3 mg/dose
  - 250 lbs to 440 lbs: 6 mg/dose
  - 440 lbs and above: 9 mg/dose
- Young calves:
  - Less than 50 lbs: 0.3 mg/kg
  - 50 lbs to 100 lbs: 0.5 mg/kg
  - 100 lbs and above: 0.7 mg/kg

**CAUTION:**

- Incompatibility: Do not mix with other antibiotics.

**Important Points**

- **Antibacterial WARNINGS**
  - **M. bovis**
    - Steer: Efficacy unknown.
    - Pig: Unknown efficacy.
  - **M. ovipneumoniae**
    - Efficacy unknown.

**Comparison of Mean AUC and Mean Tmax for Ceftiofur and Tulathromycin**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Mean AUC (µg•h/mL)</th>
<th>Mean Tmax (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceftiofur</td>
<td>412 ± 67.3</td>
<td>42</td>
</tr>
<tr>
<td>Tulathromycin</td>
<td>376 ± 66.1</td>
<td>3.2</td>
</tr>
</tbody>
</table>

**Safety Data Sheet**

- **Exposure and Reactions**
  - Immediate: None reported.
  - Delayed: None reported.

**Report Any Adverse Event**

- With soap and water. Remove contaminated clothing. If allergic reaction occurs (e.g., skin rash, hives, difficult breathing).

**Antimicrobial Susceptibility Testing**

**MIC Values**

- **H. parasuis**
  - Ceftiofur sodium: &gt;8
  - Tulathromycin: 0.002

**Comparison of Susceptibility**

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Ceftiofur Sodium</th>
<th>Tulathromycin</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. parasuis</td>
<td>≥8</td>
<td>≤0.002</td>
</tr>
<tr>
<td>M. bovis</td>
<td>2.0</td>
<td>≤0.002</td>
</tr>
<tr>
<td>M. ovipneumoniae</td>
<td>2.0</td>
<td>≤0.002</td>
</tr>
</tbody>
</table>

**SUCTION and SUBCUTANEOUS Administration**

- **H. parasuis**
  - Suckling calves: 0.3 mg/kg subcutaneously
  - Dairy calves: 0.3 mg/kg subcutaneously

**Tulathromycin Administration**

- **50 lbs:** 1 mL
- **100 lbs:** 2 mL
- **200 lbs:** 5 mL

**Key Points**

- **DRAXXIN consists of an equilibrated mixture of two isomeric forms of tulathromycin in a 9:1 ratio.**

**Pharmacokinetics**

- **AUC and Tmax**
  - **H. parasuis**
    - Ceftiofur: 412 ± 67.3 (42 hr)
    - Tulathromycin: 376 ± 66.1 (3.2 hr)

**References**

- **1. Markedly higher tulathromycin activity typically associated with the macrolides.**

**Drug Availability**

- **FOR USE IN ANIMALS ONLY. NOT FOR HUMAN USE.**

**Contact Information**

- **CONCERN?**
  - Contact Zentis, Inc.
  - Address: 9660 Richmond Rd., Building 5,
  - Cincinnati, OH 45242
  - Phone: 513-679-2000
  - Fax: 513-679-3180

- **www.zentis.com**

**Supplemental Data**

- **Figure 2**
  - Subcutaneous administration of EXCEDE Suspension
  - Administration for the Base of Ear
  - Figure 3
  - Administration for the Base of Ear
  - Figure 4
  - Subcutaneous administration of EXCEDE Suspension in the middle third of the body
  - Figure 5
  - Subcutaneous administration of EXCEDE Suspension in the middle third of the body
  - Figure 6
  - Subcutaneous administration of EXCEDE Suspension in the middle third of the body
  - Figure 7
  - Subcutaneous administration of EXCEDE Suspension in the middle third of the body

**Exposure and Reactions**

- **Antibiotic Reactions**
  - Skin reactions:
    - Erythema
    - Rash
    -皮炎
  - Nausea
  - Vomiting

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