"WHEN A NEW ANTIBIOTIC HAS NUMBERS LIKE THIS WE SUGGEST YOU LISTEN"
The Product: Zuprevo 4%

A new paradigm in the treatment of SRD
The molecule behind Zuprevo®

- New 16-membered macrolide, the first on the market with three basic centres
- Three basic centers provide high flexibility of the molecule (hydrophilic – lipophilic)
- High solubility
- Excellent inhibition of bacterial protein synthesis
- Excellent distribution/accumulation in lung tissue (distribution to site of infection)
What is Zuprevo®?

- EU marketing authorization for treatment of swine respiratory disease (SRD) associated with
  - *Bordetella bronchiseptica*, *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Haemophilus parasuis*
- Pig specific formulation (40 mg tildipirosin/mL)
- Target species: Pigs
- Single intramuscular (IM) injection at 4 mg tildipirosin/kg body weight (BW)
What makes Zuprevo® unique?

1. Bactericidal action claimed on SPC:

<table>
<thead>
<tr>
<th>Target pathogen</th>
<th>Bactericidal action</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>A. pleuropneumoniae</em></td>
<td>✓</td>
</tr>
<tr>
<td><em>H. parasuis</em></td>
<td>✓</td>
</tr>
</tbody>
</table>

And as a 16 membered macrolide Tildipirosin

- does not induce MLS$_B$ type resistance*
- is not impacted by resistance due to efflux pumps in the SRD target pathogens (mrs[A], mef[A])*  
  * in contrast to 14- (ex. Erythromycin) and 15- membered macrolides (ex. Tulathromycin, Gamithromycin)

→ On a large collection of European bacterial strains we have not seen any resistance to tildipirosin.
What makes Zuprevo® unique?

2. Excellent pharmacokinetic profile

including Long duration

- Rapid absorption from the injection site
- Extensive distribution to site of action
What makes Zuprevo® unique?

3. High convenience
   ● Excellent syringeability and solubility
   ● Convenient dose volume for all ages, including young animals
     → 1 mL / 10 kg BW
   ● Excellent local tolerance
What makes Zuprevo® unique?

4. Short EU Withdrawal period (WHP):
   - Absolutely shortest WHP due to more favorable basic oral toxicity profile (highest ADI)

   SWINE = 9 days!
<table>
<thead>
<tr>
<th>14</th>
<th>1</th>
<th>4</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>days of activity in lungs</td>
<td>single dose. 1ml/10kgs bw</td>
<td>label pathogens</td>
<td>days withhold</td>
</tr>
<tr>
<td>Long acting therapy up to 14 days lung concentration</td>
<td>Just one (1) single, convenient &amp; accurate Injection intramuscularly</td>
<td>Effective against 4 major swine respiratory disease pathogens: App, Bb, Pm &amp; Hps</td>
<td>Safe to treat even up to finishing stage &amp; provide safe meat for human consumption</td>
</tr>
</tbody>
</table>
Summary and conclusions

Zuprevo® introduces a novel tri-basic 16-membered macrolide into animal health

Key features of the unique Zuprevo® product profile are

- Broad spectrum which includes 4 major SRD pathogens
- Bactericidal activity on 2 target pathogens
- Excellent pharmacokinetics with rapid absorption from injection site, high and persistent plasma concentrations, extensive distribution resulting in long duration effective lung tissue concentrations
- High convenience
- Short withdrawal period