Antibiotic-free hypothermic storage of boar semen in Androstar® Premium results in similar fertility compared to semen stored at 17°C in extender with antibiotic content

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### Introduction
Worldwide, antibiotic resistance of bacteria in extended boar semen is increasing. The situation is favoured by overwhelming use of antibiotics together with bacterial contamination and semen storage at a relatively high temperature (+17°C). This study tested a new extender, Androstar® Premium, designed for antibiotic-free storage of boar semen at +5°C.

### Material and Methods
Four semen pools, each from three boars, were diluted split-sample with either Androstar® Premium extender containing Gentamicin (+AB) and stored at +17°C or with Androstar® Premium without antibiotics (-AB) and subsequently stored at +5°C. Semen doses for post-cervical insemination of sows had volumes of 50 ml containing 2.2 x 10⁹ sperm and doses for cervical AI of gilts had 4 billion sperm in 90 ml.

Semen tubes with Androstar® Premium -AB extender were held in packages of 40 tubes for 6 h at +24°C and were then stored at +5°C for up to 48 hrs. Tubes with Androstar® Premium +AB diluted semen were held for 2 h at +24°C and then kept at +17°C for up to 48 hrs. In each extender group 40 sows and 10 gilts were inseminated 8-12 hrs after first oestrus signs and AI was repeated in 8-12 hrs intervals until the end of oestrus.

### Results

#### Fertility results after AI with semen stored in either Androstar® Premium (+AB) at +17°C or Androstar® Premium (-AB) at +5°C

<table>
<thead>
<tr>
<th>Extender</th>
<th>Non-Return-Rate (%)</th>
<th>Farrowing Rate (%)</th>
<th>Piglets born alive (n)</th>
<th>Piglet index (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Androstar® Premium +AB (+17°C) n=50</td>
<td>90.0</td>
<td>86.0</td>
<td>14.5</td>
<td>1244.4</td>
</tr>
<tr>
<td>Androstar® Premium -AB (+5°C) n=50</td>
<td>98.0</td>
<td>92.0</td>
<td>13.8</td>
<td>1266.0</td>
</tr>
</tbody>
</table>

NRR (p=0.21), farrowing rate (p=0.59) and number of piglets born alive (p=0.27) did not differ significantly

### Conclusion
In conclusion, antibiotic-free boar semen preservation at +5°C and subsequent AI with Androstar® Premium extender without AB results in adequate semen quality, high pregnancy rates and similar piglet numbers compared to semen preservation at +17°C in extender with antibiotic content.