



## LACTER<sup>®</sup> ANTIBIOTIC SENSITIVITY REPORT

| <b>Code</b> | <b>Antibiotic</b> | <b>Reaction*</b> | <b>Code</b> | <b>Antibiotic</b> | <b>Reaction*</b> |
|-------------|-------------------|------------------|-------------|-------------------|------------------|
| A100        | Ampicillin        | S MS R           | LM20        | Lincomycin        | S MS R           |
| ZB          | Bacitracin        | S MS R           | N30         | Neomycin          | S MS R           |
| CB100       | Carbenicillin     | A MA R           | NF300       | Nitrofurantoin    | S MS R           |
| CE30        | Cephalothin       | S MS R           | NB          | Novobiocin        | S (MS) R         |
| F2          | Florphenicol      | A (MS) R         | OT90        | Oxytetracycline   | S MS R           |
| CT20        | Chlortetracycline | S MS R           | PN          | Penicillin        | S MS R           |
| CL10        | Colistin          | S (MS) R         | PM300       | Polymyxin B       | S MS R           |
| DC30        | Doxycycline       | S (MS) R         | SM1         | Sulfamethizole    | S MS R           |
| EM15        | Erythromycin      | S (MS) R         | SS1         | Sulfasoxazole     | S MS R           |
| FZ10        | Furazoline        | S MS R           | SSS30       | Tripe Sulfa       | S MS R           |
| GM10        | Gentamicin        | S MS R           | VA30        | Vancomycin        | S MS R           |

### Comments:

These results (in vitro) reflect the activities of each antibiotic at its therapeutic dosage on a mixed culture of Lactobacilli, Enterococcus and Bifidobacterium sp.

\* Reaction Code - **S** - Sensitive      **MS** - Moderately Sensitive      **R** - Resistant

### Sensitive:

Means the antibiotic will kill or destroy the organism(s)

### Moderately Sensitive:

Means the antibiotic may not the organism(s) but it will help to a certain degree as far as slowing the infection

### Resistant:

Means the antibiotic will not have any affect on the organism(s) and should not be used to right the infection caused by the organism



## REPORT ON THE EFFECT OF ENROFLOX. 30% AND DOXYCYCLINE 50% ON LACTER®

Matura Tech, Inc. Microbiology Laboratory, Springfield MO

| Lab Number | Sample Identification | Lot Number    | Method of Analysis | Lactobacillus Count CFU/g Raw (actual) | Gram Strain | Gram Morphology | Catalase Activity | Adjusted Lactobacillus Count CFU/g (Reported) |
|------------|-----------------------|---------------|--------------------|--|-------------|-----------------|-------------------|---|
| 20-569     | Doxycycl. 50%         | Not Available | SL-01              | 5.86 x 10 <sup>7</sup>                 | 100% POS    | CB              | 100% Neg          | 5.86 x 10 <sup>7</sup>                        |
| 20-782     | Enroflox. 30%         | Not Available | SL-01              | 3.85 x 10 <sup>7</sup>                 | 100% POS    | CB              | 100% Neg          | 3.85 x 10 <sup>7</sup>                        |
| 20-836     | Lacter®               | 20-12106      | SL-01              | 1.95 x 10 <sup>7</sup>                 | 100% POS    | CB              | 100% Neg          | 1.95 x 10 <sup>7</sup>                        |

### Abbreviations:

POS= Gram or Catalase positive, Neg = Gram or Catalase Negative. C= Cocci, B = Bacilli, and Y = yeast. Adjusted counts reflect sample weights used and percentages of bacterial colonies that fit the criteria for lactic acid bacteria.

### Notes:

Lab number 20-836, Lacter®, was a sample in progress in the lab when the samples of Doxycycline and Enroflox. were received for analysis. It was used as the test culture for this trial. As you see there are only slight differences between the counts, indicating that the Lacter® culture should survive Doxycycl. and Enroflox. at the requested test level of 50 ppm.



## REPORT ON THE RESISTANCE OF LACTER<sup>®</sup> ON TWO FEED MEDICATIONS

### Purpose:

The purpose of this study is to determine the sensitivity of the Lacter<sup>®</sup> culture to Oxytetracycline and Chlortetracycline. These two feed medications are being used in aquaculture (shrimp feed 28% protein) in conjunction with Lacter<sup>®</sup> probiotic culture.

### Experimental Design:

The concentrations of Oxytetracycline (OT) and Chlortetracycline (CT) used in the test were:

- OT: 90.00%
- CT: 20.00%

The antibiotics (feed medication) were obtained from Thosco Corporation, Beijing, China. Oxytetracycline Lot # 589098 and Chlortetracycline Lot # 86784.

Solutions of the correct concentrations were prepared and sterile antibiotic sensitivity discs were placed in each solution and allowed to soak for 30 minutes. The discs were then removed and blotted dry and then air dried for 15 minutes at room temperature.

The antibiotic containing discs were placed on the surface of plates MRS Agar plated that had been streaked with a randomly selected culture of Lacter<sup>®</sup>. The plates were incubated for 48 hours and ones of inhibition around each disc were measured at 48 and 72 hours. The test was performed in replicates of 9.

### Result:

| Replicate Number | Oxytetracycline zone of inhibition measured in mm. | Chlortetracycline |
|------------------|--|-------------------|
| 1                | 0  | 0                 |
| 2                | 0  | 0                 |
| 3                | 0  | 0                 |
| 4                | 0  | 0                 |
| 5                | 0  | 0                 |
| 6                | 0  | 0                 |
| 7                | 0  | 0                 |
| 8                | 0  | 0                 |
| 9                | 0  | 0                 |

### Analysis and Comment:

No inhibition of the Lacter<sup>®</sup> culture was observed at the concentrations used in this study. In every case a zone of inhibitions of 0 mm (No inhibitory effect) was observed. There should be no adverse effects of using these antibiotics combined with Lacter<sup>®</sup>. If these concentrations are changed this work should be repeated to insure that higher concentrations also have no effect.



## REPORT ON THE EFFECT OF COBAN AND NICARBAZIN ON LACTER<sup>®</sup>

| Lab Number | Sample Identification              | Lot Number | Method of Analysis | Lactobacillus Count CFU/g Raw (actual) | Gram Strain | Gram Morphology | Catalase Activity | Adjusted Lactobacillus Count CFU/g (Reported) |
|------------|------------------------------------|------------|--------------------|--|-------------|-----------------|-------------------|---|
| 30-597     | Lacter <sup>®</sup> w/ Coban       | 2065C      | SL-01              | 5.30 x 10 <sup>8</sup>                 | 100% POS    | CB              | 100% Neg          | 2.99 x 10 <sup>8</sup>                        |
| 30-599     | Lacter <sup>®</sup> w/ Nicarbazine | 2265N      | SL-01              | 4.50 x 10 <sup>8</sup>                 | 100% POS    | CB              | 100% Neg          | 1.90 x 10 <sup>8</sup>                        |

### Abbreviations:

POS= Gram or Catalase positive, Neg = Gram or Catalase Negative. C= Cocci, B = Bacilli, and Y = yeast. Adjusted counts reflect sample weights used and percentages of bacterial colonies that fit the criteria for lactic acid bacteria.

### Notes:

Coban and/ or Nicarbazine will not affect viability of Lacter<sup>®</sup>.