

15 October, 2012

Zoono Limited  
PO Box 9428  
Newmarket  
AUCKLAND 1149

Attention: Paul Hyslop

Dear Paul,

## Sample Information

Samples received	Monday, 27 August, 2012
Number of samples	1
Product name:	Zoono Z71 XX
Number of tests	9
Number of test organisms	3
Project number	12NZAK0058850A
Sample numbers	3096794 - 3096802
Laboratory testing started	Saturday, 15 September, 2012
Test	Antimicrobial testing
Methodology	As supplied by the client

## Introduction

As requested, the microbiological challenge test for antimicrobial and antifungal effectiveness was performed on the samples as submitted.

All documentation is kept in accordance with ISO 17025:2005. Laboratory personnel involved with this testing, have the appropriate training and experience to perform all necessary methodology.

## Selection of Product for testing

Samples were chosen for testing by the client.

## Selection of cultures and culture conditions

Cultures were maintained in accordance with the recommendations of the Curator of the Culture Collections Centre NZ Communicable Disease Centre and New Zealand Laboratory Services quality control systems.

As requested, the following organisms were used in the test:

*Escherichia coli* (NZRM 2577)  
*Staphylococcus aureus* (NZRM 147)

### Selection of culture medium and incubation conditions

1. Tryptic Soy Agar was used as the medium of choice for the enumeration of the bacteria.
2. All plates were incubated at 35 - 37°C for 48 hours.

### Selection of Technique

Methodology used as supplied by the client.

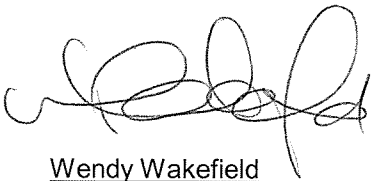
### Results

The results apply to the samples as received at the laboratory. Please refer to the Sample Identification and Result table for all results.

Please contact us should you require any further information.

Yours faithfully,

#### EUROFINS NZ LABORATORY SERVICES LIMITED



Wendy Wakefield  
Team Leader – Pharmaceutical Micro Services



Taiana Mafi  
Senior Technician – Pharmaceutical Micro Services

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## Sample Identification and Results Table

Product Name: Zoono Z71 XX					
Sample Number	Contact Time	Recovery Level (cfu/ml)		Log reduction between control recovery level and product recovery level (cfu/ml)	% reduction between slide control recovery level and product recovery level (cfu/ml)
		Slide Control (no test organism)	Product + Test Organism		
Test Organism: <i>Escherichia coli</i> (NZRM 2577) Initial inoculum level (cfu/ml): $2.0 \times 10^8$ (log 8.3) Test Organism: <i>Escherichia coli</i> (NZRM 2577) 7 day re-inoculation inoculum level (cfu/ml): $1.0 \times 10^8$ (log 8.0) 14 day re-inoculation inoculum level (cfu/ml): $9.0 \times 10^7$ (log 8.0)					
3096794	1 hour	$1.6 \times 10^6$	$6.2 \times 10^4$	1.4	96.1
3096795	7 days	$3.4 \times 10^5$	NR	5.5	100.0
3096796	14 days	$8.8 \times 10^5$	NR	5.9	100.0

Key:	
NZRM	New Zealand Culture Collection – Medical Section
NR	No recovery

## Sample Identification and Results Table

Product Name: Zoono Z71 XX					
Sample Number	Contact Time	Recovery Level (cfu/ml)		Log reduction between control recovery level and product recovery level (cfu/ml)	% reduction between slide control recovery level and product recovery level (cfu/ml)
		Slide Control (no test organism)	Product + Test Organism		
Test Organism: <i>Staphylococcus aureus</i> (NZRM 147) Initial inoculum level (cfu/ml): $1.4 \times 10^8$ (log 8.1) Test Organism: <i>Staphylococcus aureus</i> (NZRM 147) 7 day re-inoculation inoculum level (cfu/ml): $1.4 \times 10^8$ (log 8.1) 14 day re-inoculation inoculum level (cfu/ml): $7.5 \times 10^7$ (log 7.9)					
3096797	1 hour	$1.1 \times 10^6$	$9.0 \times 10^0$	5.0	99.9
3096798	7 days	$2.3 \times 10^6$	$3.5 \times 10^2$	3.9	99.9
3096799	14 days	$9.4 \times 10^5$	$1.9 \times 10^1$	4.7	99.9

Key:	
NZRM	New Zealand Culture Collection – Medical Section
NR	No recovery