

**Biocidal Activity of Clinell Universal  
Sanitising Wipes:**

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**10 Second MRSA Tests**

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**Project Report Prepared for GAMA Healthcare Ltd**

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**Huddersfield Microbiology Services  
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## Summary

The biocidal activity of the formula used in Clinell Universal Sanitising Wipes was tested at very short contact times (10 seconds) against Methicillin resistant *Staphylococcus aureus* (MRSA ATCC 43300). Due to the short contact times required the tests were carried out in filter funnels containing 9ml of the sanitiser to which 1ml of a  $8.7 \times 10^8$  cfu/ml culture was added. After 10 seconds the mixture was filtered through a 0.45  $\mu\text{m}$  sterile filter. The filters were placed on the surface of agar plates and incubated for 24 hours at 37°C. Taking a conservative assumption that less than 15 organisms survived these results indicate a 7.8  $\log_{10}$  reduction in viable count after a 10 second contact time.

### **Biocidal Activity of Clinell Universal Sanitising Wipes: 10 Second MRSA Tests**

## **1 Introduction**

This test was performed to assess the ability of the Clinell Universal Sanitising Wipes formula to kill Methicillin resistant *Staphylococcus aureus* (MRSA ATCC 43300) at very short contact times.

## **2 Experimental Procedure**

### **2.1 Preparation of the Test Culture**

A 24 hour slope culture of *S. aureus* (MRSA ATCC 43300) was prepared. After 24 hours incubation at 37°C bacteria were recovered from the slope using a sterile swab. The swab tip was then placed in a sterile conical flask containing 10ml Maximum Recovery Diluent (LabM) and 5g of glass beads. The flask was then agitated for 3 minutes to release and distribute the bacteria.

### **2.2 Total Viable Count of the Test Culture**

The total viable count of the test culture was determined by serially dilution down to  $10^{-7}$ . Following dilution duplicate 1ml aliquots of the  $10^{-6}$  and  $10^{-7}$  dilutions were transferred to sterile filter assemblies containing 100ml of sterile MRD and filtered through a 0.45  $\mu\text{m}$  sterile filter. After filtration the filters were rinsed with a further 100ml of sterile MRD. Following filtration the filters were placed on the surface of LB agar plates and incubated for 24 hours at 37°C.

### **2.3 Activity Testing**

9ml of Clinell Universale Sanitising Wipes was placed in a sterile filter assembly containing 0.45  $\mu\text{m}$  sterile filter followed by a 1 ml aliquot of the test culture. After a contact time of 10 seconds the suspension was filtered (vacuum was applied after 9 seconds). After filtration the filters were rinsed with a further 100ml of sterile MRD. Following filtration the filters were placed

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on the surface of LB agar plates and incubated for 24 hours at 37°C. This procedure was repeated six times.

### 3 Results

Plate count results for the test culture can be found in Table 1. These counts indicate that the test culture had a total viable count of  $8.7 \times 10^8$  cfu/ml.

Plate	Dilution	
	$10^{-6}$	$10^{-7}$
1	TNC	84
2	TNC	89

Table 1. Test Culture Fluid Total Viable Counts

	Replicates					
	1	2	3	4	5	6
Counts	0	0	0	0	0	0

Table 2. Viable Counts of the Test Filters

Assuming that the viable counts from the test filters are  $\leq 15$  then these results indicate that the formula used in Clinell Universal Sanitising Wipes is able to generate a  $\log_{10}$  reduction in viable counts of greater than 7.8 when tested against a 24 hour culture of *S. aureus* (MRSA ATCC 43300).

### 4 Summary and Conclusions

The aim of this work was to assess the effectiveness of Clinell Universal Sanitising Wipes against *S. aureus* (MRSA ATCC 43300) at very short contact times. The results of this study indicate that the product is highly effective under these conditions, generating total kills in 10 seconds. These results indicate that the product is able to produce a  $\log_{10}$  reduction in viable counts of greater than 7.8 in only 10 seconds.