



# FINAL REPORT

Biocidal UV Light Efficacy Testing

ORDER Number  
151205550

PREPARED FOR:

ISB Inc.  
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## Certificate of Analysis

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**Client:** ISB Inc.

**Contact:** Eugene Rubinchikov

**Project:** Biocidal UV Light Efficacy Testing (5 watt light with ozone)

**Product :** UV Shoe Sanitizer Prototype

**EMSL NO:** 151205550

**Sample received:** 10/24/2012

**Start date:** 10/26/2012

**Report date:** 11/6/2012

**Challenge Fungi:** *Trichophyton rubrum* and *Trichophyton mentagrophytes*

**Experimental Summary:** The testing procedure was designed after discussions between EMSL Analytical, the testing company, and the client, ISB Inc. The testing was conducted on a UV shoe sanitizer prototype for its ability to reduce (disinfect) fungi. The testing was conducted in our Houston, TX Microbiology Laboratory.

### **Procedure:**

Inoculum was prepared by harvesting hyphae and spores from cultures of *T. rubrum* and *T. mentagrophytes* in sterile distilled water. Test coupons were prepared by inoculating 1000 µL of each fungal inoculum onto separate glass slides and allowed to air dry; approximately 15 minutes. After drying had occurred the inoculated pieces were subject to the prototype UV sterilization unit for either 15 or 30 minutes. After exposure, the slides were placed into 10 mL of sterile distilled water and vortexed. Serial dilutions and malt extract agar plates were made using the recovery solution. Untreated inoculated glass slides were used to determine starting inoculum levels. All plates were incubated at 28°C for 7 days before being counted. All treatments were performed in triplicate and all plating in duplicate.



**Experimental Results:**

**Table 1.** Reduction of *T. mentagrophytes* when exposed to UV Prototype.

Sample	Average CFU	LR	%Reduction
Control	5.23x10 <sup>6</sup>		
15 min exposure	ND	5.71	99.9998
30 min exposure	ND	5.71	99.9998

LR = Log Reduction

Log Reduction and %Reduction compares control CFU and final treated CFU

ND = None detected, <10

**Table 2.** Reduction of *T. rubrum* when exposed to UV Prototype.

Sample	Average CFU	LR	%Reduction
Control	6.75x10 <sup>5</sup>		
15 min exposure	ND	4.83	99.9985
30 min exposure	ND	4.83	99.9985

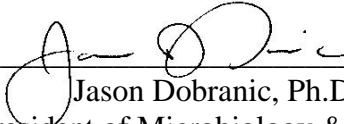
LR = Log Reduction

Log Reduction and %Reduction compares control CFU and final treated CFU

ND = None detected, <10

**Conclusions/Observations:**

Two exposure times were compared in this test using a UV shoe sanitizer prototype against two species of *Trichophyton*. The results demonstrated that the prototype was equally effective at 15 and 30 minutes of exposure. There were no recoverable fungi from any of the exposures times. The starting inoculum was one log higher for *T. mentagrophytes* than *T. rubrum* which accounted for the difference in percent reduction; 99.9998 vs. 99.9985.

  
Jason Dobranic, Ph.D.

Vice President of Microbiology & Life Sciences