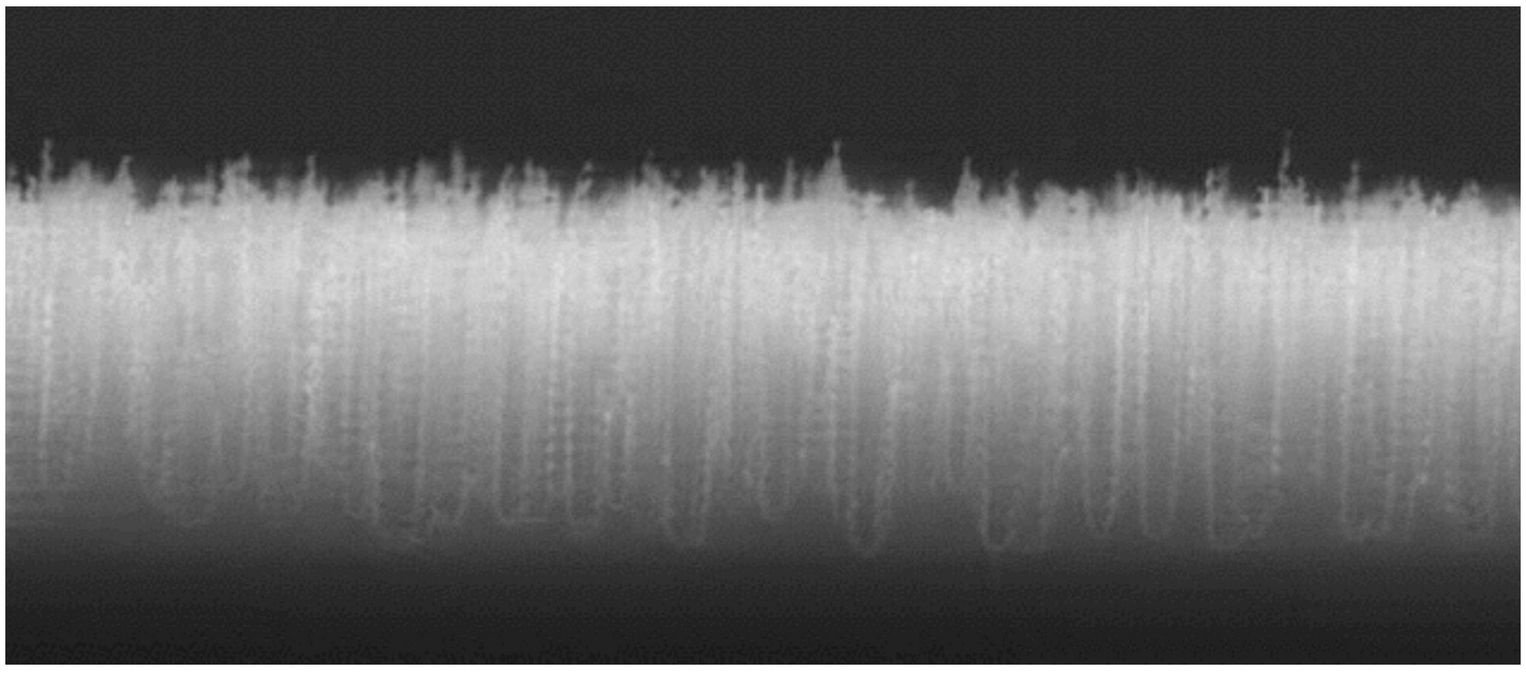
WHAT MICROBIOSHIELD DOES:

For years, science has combated bio-hazards with “Chemical Kills” – utilizing toxic chemicals to kill a dangerous biological threat (bacteria, viruses, etc.).Study and advancements in the field of Nanotechnology, has led to the creation of a **“Mechanical Kill” mechanism**, whereby coating an object will kill the cells of the bio threat trying to attach to the object. The MBS coating is **approximately 4 Nano meters in size**, as opposed to most microbial matter, which is 90-100 Nano meters in size, making it impervious to the bio-hazard. The material has been developed in such a way, that it creates a **“Micro Crystalline Structure”**.



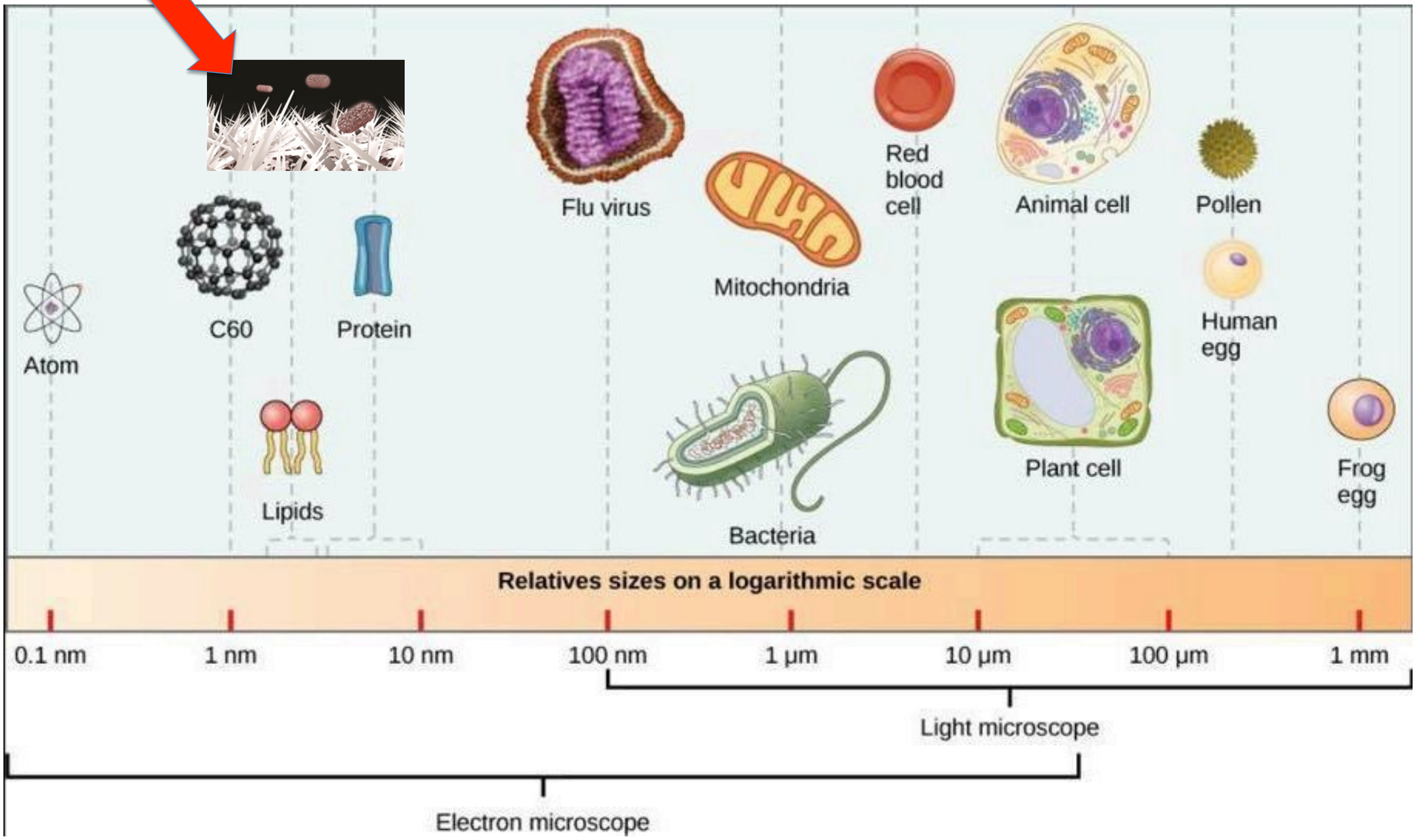
WHAT IS MICROBIOSHIELD:

Microbioshield is fast acting nano particulate silica that prevents bacteria and virus particles from attaching to surfaces. It is a chemically inert solution composed of **silica dioxide (SiO2) crystals held in suspension.**

TECHNICAL INFORMATION

MBS COATING

MICROBE RELATIVE SIZE VS MICROBIOSHIELD:



MAJOR MEDICAL UNIVERSITY CLINCAL STUDY

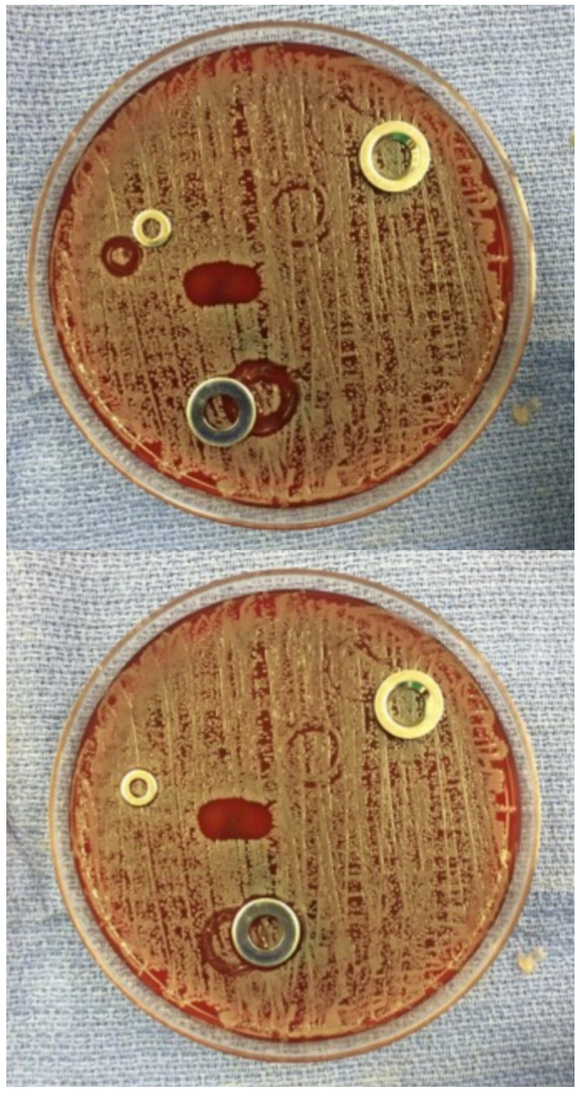
COATING STABILITY:

NSC suspespension was applied to petri dish with calibrated loupe and inoculated with MRSA

Same standardized MRSA inocoulum used for across all experiments

COATING STABILITY:

Coated and control stainless steel washers used No zone of inhibition = no leaching of NSCs. Protected to edge inoculated washer.



COATING EFFICACY:

Control and coated implants were inoculated with a standardized 0.5 McFarland (150 million cells/ml) MRSA culture and put in growth medium

Coated screw which cleared effected broth

TECHNICAL INFORMATION

TEST RESULTS USING MICROBIOSHIELD PROTECTANT SURFACE CLEANER:

These experiments and this discussion is part of a research experiment performed by an FDA/CDC approved Laboratory.

Table 1: AMP Surface Cleaner Results Table

Hours	Bacteria	MBS added?	Incubation Time of Bacteria on Slide	Growth observed	OD	CFU/mL**	1:10 CFU/mL**
24 hours	None	No	30	No	.010	0	
	Staphylococcus Aureus	No	30	Yes	.656	>100,000	
		Yes	10	No	.019	0	0
		Yes	30	No	.022	0	0
	Escherichia Coli	No	30	Yes	.455	>100,000	
		Yes	10	No	.016	0	0
					.		
	Klebsiella Pneumonia	No	30	Yes	.552	>100,000	
		Yes	10	No	.231	0	0
		Yes	30	No	.015	0	0

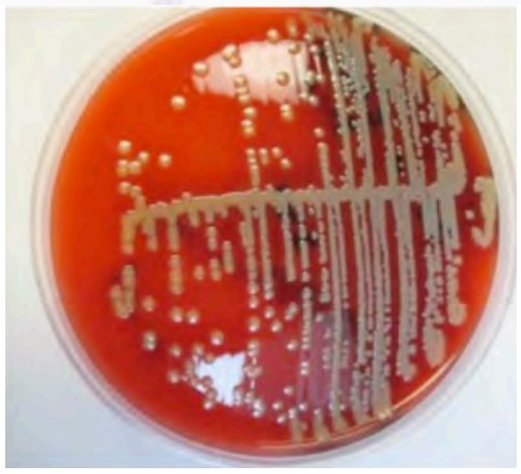
**Sub-cultures were cultured at 100% and 1:10 dilution. Read 24 hours after inoculation of sub-culture

FIGURE 10:

Blood Agar Plate inoculated from MBS Slide with Staphylococcus Aureus

FIGURE 12:

Blood Agar Plate inoculated from untreated slide with Staphylococcus Aureus



TECHNICAL INFORMATION

TEST RESULTS USING MICROBIOSHIELD PROTECTANT SURFACE CLEANER:

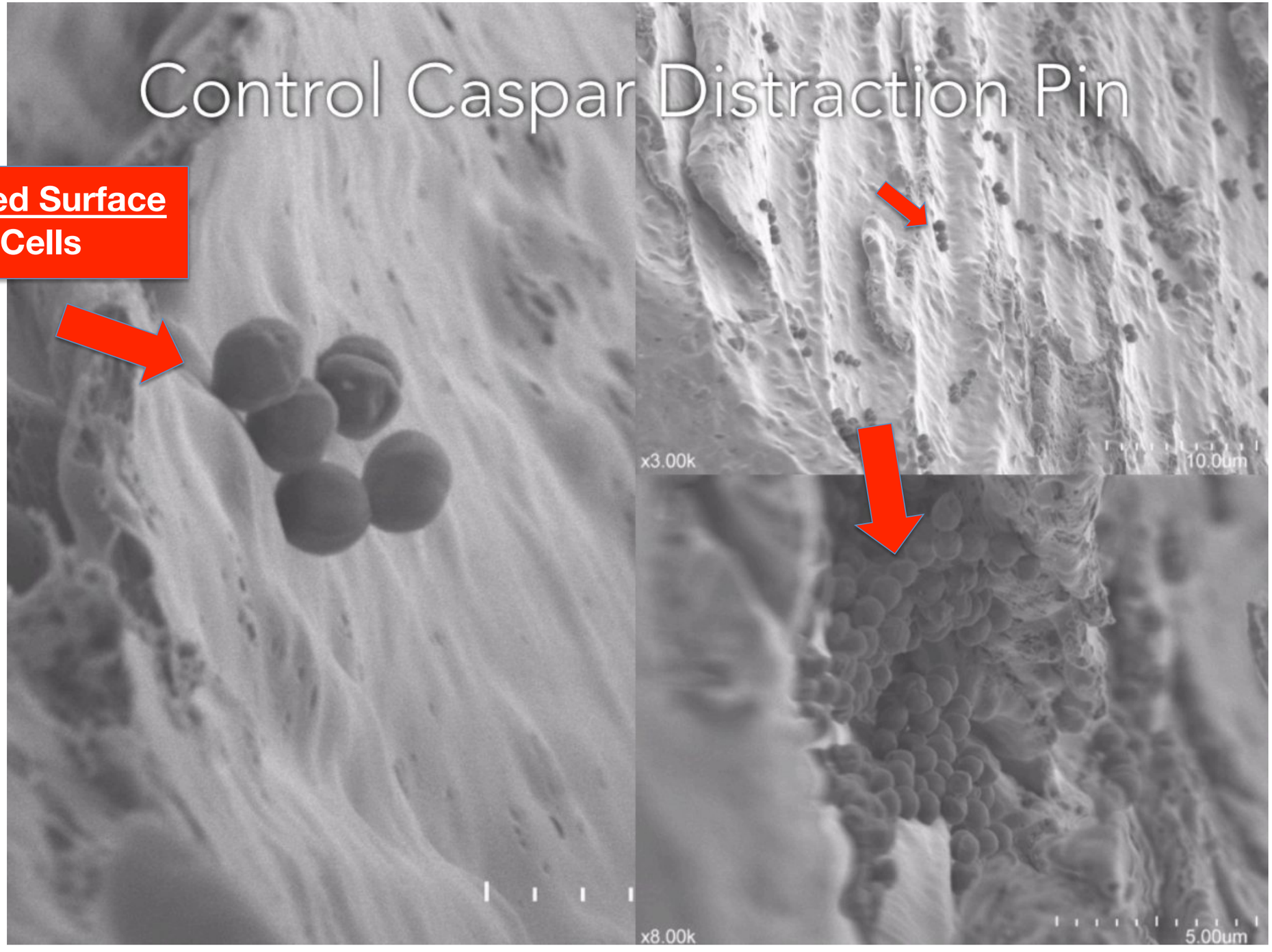
Table 2: Hand Sanitizer Results Table

Hours	Bacteria	MBS	Incubation Time of Bacteria on Slide	Growth observed	OD	CFU/mL**
24 hours	None	No	30	No	.010	0
	Staphylococcus Aureus	No	30	Yes	.656	>100,000
		Yes	30	No	.012	0
	Escherichia Coli	No	30	Yes	.455	>100,000
		Yes	30	No	.016	0
	Klebsiella Pneumonia	No	30	Yes	.552	>100,000
		Yes	30	No	.020	0

*Quantification of Staphylococcus Aureus CFU is subjective due to abnormal growth pattern. The colonies looked extremely small probable indication of cell wall injury.

** Sub-cultures were cultured at 100% and 1:10 dilution. Read 24 hours after inoculation of sub-culture.

TECHNICAL INFORMATION



Untreated Surface
Healthy Cells

TECHNICAL INFORMATION