MEDCu	**MedCu Laboratory Report**	LBR-0100-73b
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Date: 12-August-2025
Certificate: MC263b

Determination of Antibacterial Efficacy of MedCu wound dressing containing Copper Oxide vs. Cutimed Sorbact Pad

Purpose:	Determination of Antibacterial efficacy of MedCu Antibacterial wound dressing containing Copper Oxide vs. Cutimed Sorbact Pad, against a mixture of gram +/gram – bacteria.
Test article details:	Test Article 1 (TA1): **Cutimed Sorbact Pad (**Fig. 1) **Test Article Ref:** 72162-27 **Test Article Lot#:** 448093 **Test Articles Description:** Sorbact Pad is a bacteria and fungi binding wound dressing, based on Sorbact®. By absorbing and retains exudate, Sorbact Pad reduces the microbial load in the wound bed. Test Article 2 (TA2): **MedCu Antibacterial wound dressing with Copper Oxide (**Fig. 2) **Test Article Ref:** 2C-1012-01 **Test Article Lot#:** 20/01493 (Produced on 09/2020). **Test Articles Description:** MedCu Antibacterial Wound Dressings with Copper Oxide are non-adhesive sterile, soft, single use wound dressings composed of an internal absorbent layer containing copper oxide particles and one external nonwoven layer impregnated with copper oxide particles. The external layer cover is intended to be in contact with the wound. The wound dressing size is of 10 cm x 12 cm. Negative Control (NC) Article **Life-Padded Sterile Pads** (Wound dressing with 0% Copper Oxide) **Test Article Ref:** 7290103449995 **Test Article Lot#:** 1021512
Test organism:	Mix gram +/gram – bacteria (MRSA, *Klebsiella pneunomonia, Eschericia coli, Enterobacter aerogenes*)
Equipment:	37°C Incubator, Stomager (Bag Mixer), Pall filtration device; a 0.45 µm pore size membrane (Millipore catalogue number EZHAWG474); petri dishes.
Exposure time:	180 minutes

Sample size:	Triplicate swatches of 3.3 cm x 3.3 cm per test item.
Target Inoculum level per sample:	(3-5) x 10^6 Colony Forming Unit (CFU).
Inoculum volume:	1.0 ml.
Inoculum carrier:	Nutrient Broth (NB, Sigma-Aldrich - catalog number 03856 media).
Neutralizer:	DeyEngley (D/E) Broth (LAB187, Lab M Limited, UK).
Neutralizer volume:	100 ml.
Growth selective media:	CHROMagar™ Orientation, CHROMagar, France.
Additional Media:	Tryptone Soya Broth (TSB), sterile 0.85% saline/0.1% Tween 80 (ST).
Incubation Temperature:	37±2°C.
Test assay and Antibacterial determination:	1. Square swatches of 3.3 cm x 3.3 cm each test dressings were aseptically cut. 2. A fresh transplant was taken from a stock culture of each test microorganism and grown overnight at 37±2ºC in TBS. 3. A standard plate count was performed to determine the bacterial population titer of each microorganism. 4. An inoculation stock solution in 5% NB was prepared by mixing an aliquot from each microorganism in order to achieve a final total concentration of ~0.5 x 10^6 CFU per ml. 5. One ml aliquots of the microbial stock solution were put in the bottom of a sterile petri dish (Fig 3a). 6. Each individual swatch was placed over the microbial solution, making sure that all liquid was completely absorbed into the test samples (Fig 3b). 7. The vessels were closed hermetically and put in a 37°C incubator for 3 hr. 8. After the incubation period, the samples were removed from the petri dishes. 9. The remaining bacteria in the petri dishes were recovered by washing the plates with 20 ml neutralizing solution (D/E) and the neutralizing solutions were collected in sterile vessels. 10. From each vessel, 10 µl, 100 µl, and 1 ml of each of the above recovered wash solutions were filtered through 0.45 µm filter membranes. 11. The filters containing the bacteria were rinsed twice with 100±5 ml of ST.

	12. The membranes were put on petri dishes containing Chromagar and incubated at 37°C. 13. After 48 hours of incubation the CFU were counted.
Log reduction calculation:	The log reduction calculations were determined using the following formula: log A - log B = log reduction, where A is the initial inoculum ("Time 0") and B is the average colony forming units of the triplicate inoculum samples recovered from "Time 3" hours respective samples.

Table 1- Vessel/wound dressing swatch time exposure

Mix gram +/gram - bacteria

Article	Copper Oxide	Vessel Number	Exposure Time
TA1	No	1	180 minutes
		2	
		3	
TA2	Yes	4	180 minutes
		5	
		6	
NC	No	10	180 minutes
		11	
		12	

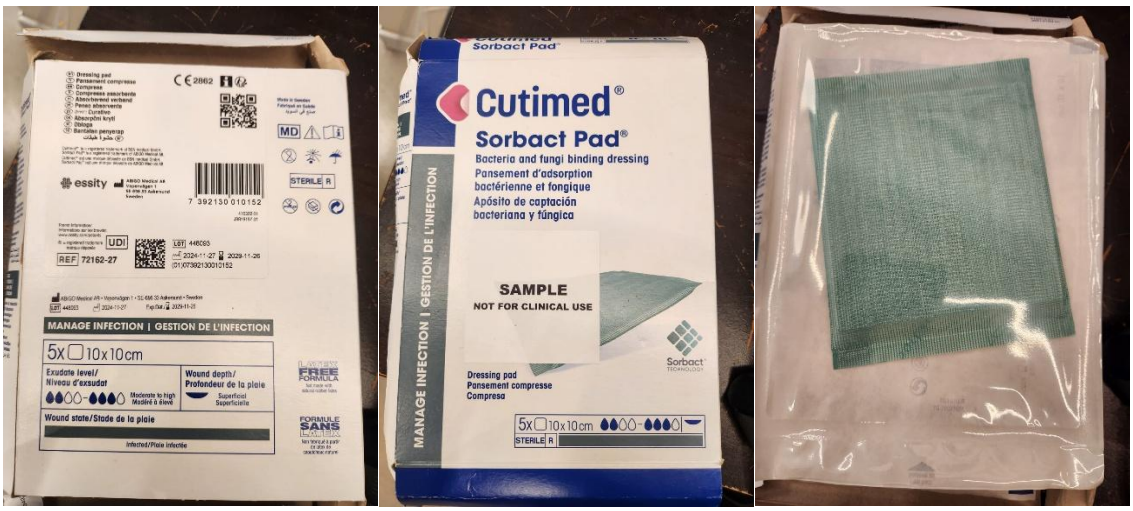

Fig. 1 Cutimed Sorbact Pad- (TA1)

Fig.2 MedCu antimicrobial wound dressing with Copper Oxid- (TA2)

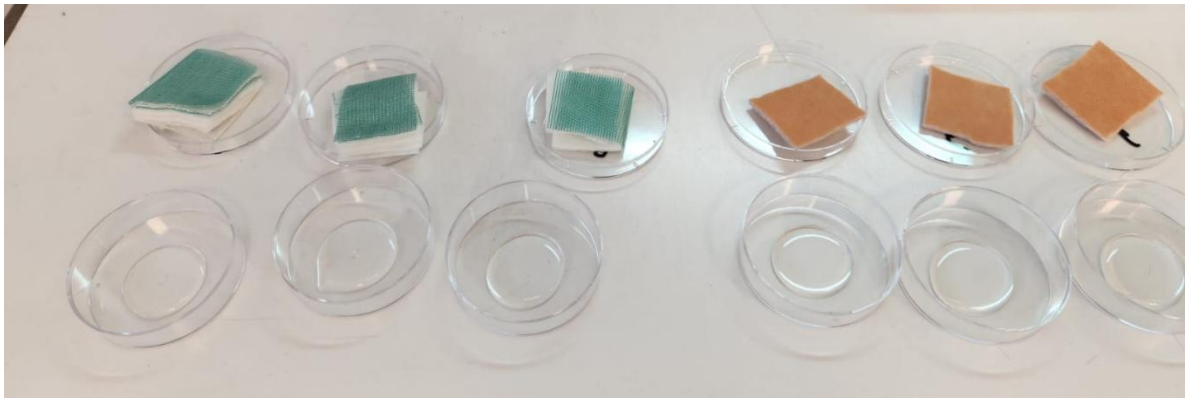

Fig.3a 1000µl of the microbial stock solution were put in the bottom of a sterile petri dish.

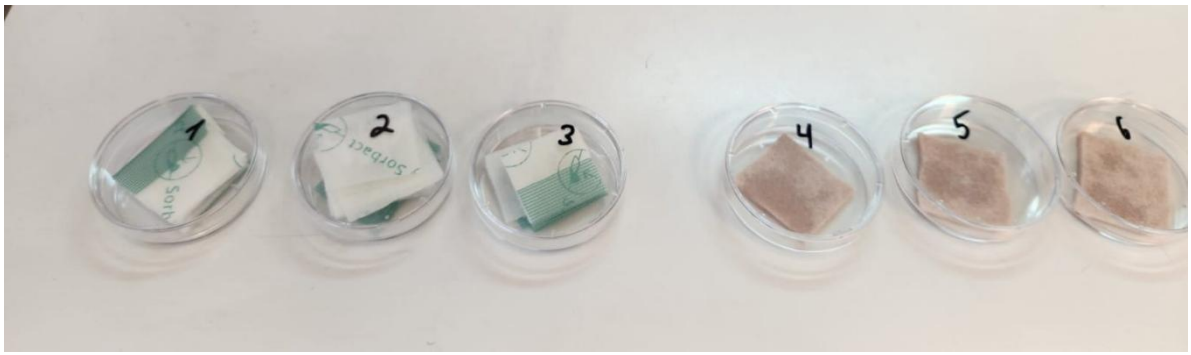

Fig.3b Each test swatch sample was placed over the microbial stock solution making sure that all liquid was completely absorbed into the test samples.

Results

Table 2: Antimicrobial Efficacy

Mix gram (+) and gram (-) bacteria: Initial Inoculum (A): 500,000 CFU (log=5.7)							
Test Item	Copper Oxide presence	Incubation Time	Rep.	Recovered CFU	Final Log	Log Average (B)	Log reduction
TA1	No	180 minutes	1	2000	3.3	4.07	1.63
			2	20000	4.3		
			3	40000	4.6		
TA2	Yes	180 minutes	1	<100	<2.0	<2.0	>3.7
			2	<100	<2.0		
			3	<100	<2.0		
NC	No	180 minutes	1	>500000	>5.7	>5.7	-
			2	>500000	>5.7		
			3	>500000	>5.7		

Conclusion:

MedCu wound dressing with Copper Oxide (TA2) reduced the bacterial titers by more than 3.7 logs (from 5.7 logs to less than 2 logs [which is the lower limit of detection of the assay], i.e. by >99.9%) as compared to the initial inoculum.
Cutimed Sorbact Pad (TA1) did not completely eliminate the bacteria in the bottom of the plates, leaving more than 20,000 live bacteria (4.07 logs).
As compared to Cutimed Sorbact Pad (TA1), MedCu wound dressing (TA2) reduced the bacterial titers by more than 2 logs (4.07- 2.0 logs; i.e. by more than 99%).

	Position	Full Name	Signature	Date
Experiment performed by	Laboratory Assistant	Tohar Roth	T.R	12.08.2025
Report written by:	Laboratory Assistant	Tohar Roth	T.R	17.08.2025
Reviewed and approved by	Chief Scientist	Dr. Gadi Borkow		17.08.2025