Test Results of the Effects of Silver Antimicrobial Dressings on Drug Resistant Bacteria *in vitro*

Smith+Nephew

ACTICOAT◊
Antimicrobial Barrier Dressings

Brand name	Product types available	Log reduction in 30 minutes for MRSA	Log reduction in 30 minutes for VRE	Log reduction in 30 minutes for 5 NDM-1 producing bacterial strains	Log reduction in 30 minutes for drugresistant P. *aeruginosa* 137366	Method of silver delivery		What does that mean?
						Initial	Solution (concentration)	
ACTICOAT◊ Antimicrobial Barrier Dressing (Smith+Nephew)	Dressing (3 and 7 day)	> 6.0[1]	> 6.0[1]	> 4.0[7]	> 5.0[8]	Silver Ag° Nanocrystals[10]	Ag^+, Ag^0/ Ag^+ clusters (70-100 ppm)[10]	ACTICOAT showed marked bactericidal activity against MRSA, VRE, NDM-1 producing bacterial strains and drug-resistant P. *aeruginosa* at 30 minutes *(in vitro)*
Silverlon™ (Argentum LLC)	Dressing, island dressing, foam strips (7 day)	0.0[1]	1.54[1]	Not reported	<1[8]	Silver oxide[11]	Ag^+ (<1 ppm)[11]	Silverlon showed no activity against MRSA and bacteriostatic activity against VRE within 30 minutes. No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug-resistant P. *aeruginosa*
AQUACEL™ Ag (ConvaTec)	Dressing, rope (7 Day)	0.0[1]	0.0[1]	Not reported	<1[8]	AgCl[11]	Ag^+ (<1-3 ppm)[1a]	Aquacel Ag showed no activity against either MRSA or VRE within 30 minutes. No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug-resistant P. *aeruginosa*
Aquacel™ Ag Extra™ (ConvaTec)	Dressing (7 days)	<1 [2]	<1 [2]	Not reported	0.0[2]	AgCl[11]	Ag^+ (<1-3 ppm)[1]	Aquacel Ag Extra showed no activity against either MRSA or VRE within 30 minutes. No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug resistant P. *aeruginosa*
TheraBond 3D™	Wound layer, island, wrap dressing (7 day)	0.0[3]	No Speed of kill data	Not reported	<1[3]	Silver plated fabric	Ag^+ Not reported	Therabond 3D demonstrated bactericidal activity against MRSA, but no rapid activity against VRE was reported. No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug-resistant P. *aeruginosa*
KerraContact™ (Crawford Healthcare)	Barrier dressing (7 day)	0.0[4]	0.0[4]	Not reported	Not reported	Silveroxysalts[12]	Ag+, Ag2+, Ag3+ (6 ppm)[12,13]	KerraContact is bactericidal against MRSA or VRE from 4 hours with no effect at 30 minutes reported. No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug-resistant P. *aeruginosa*
Mepilex™ Ag (Mölnlycke)	Foam, post-op border, transfer (7 day)	<1 [5]	<1 [6]	Not reported	<1[9]	Silver sulphate[14]	Ag+ (6 ppm)[15,16]	Mepilex Ag showed no activity against MRSA or VRE in 30 minutes. No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug-resistant P. *aeruginosa*
Silvercel™ (Systagenix)	Dressing,rope (7 day)	<1 [6]	0.0[6]	Not reported	Not reported	Ag alginate[17]	Ag^+ (~1 ppm)[11]	Silvercel showed no activity against MRSA or VRE in 30 minutes. No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug-resistant P. *aeruginosa*
SilvaSorb™ (Medline Ind.)	Sheet, perforated sheet, strands, (7 day), gel (3 day)	0.0[1]	0.0[1]	Not reported	<1[8]	AgCl [11]	Ag^+ (~1 ppm)[11]	SilvaSorb showed no activity against MRSA or VRE in 30 minutes No published data to support rapid antimicrobial activity against NDM-1 producing bacterial strains or drug-resistant P. *aeruginosa*

The Minimum Bactericidal Concentration (MBC) for clinically relevant bacteria is between 5 and >50ppm[18,19] and up to 60.5ppm for MRSA[20]. This means in order to kill MRSA the dressing must kill bacteria with a MBC of at least 60.5 PPM (200ppm x 0.0325=60.5ppm).

Notes: *In vitro* results do not necessarily translate into clinically relevant results. Antimicrobial agents are considered bactericidal if they induce a 3 or greater log reduction in a clinically relevant time frame[19]

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References

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For detailed product information, including indications for use, contraindications, effects, precautions and warnings, please consult the product's Instructions for Use (IFU) prior to use.

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