

NEWS

An in-vitro model to test the ability of dressings to break down chronic wound biofilms¹

New, exciting evidence

Background

Biofilms are reported to be a major factor contributing to multiple chronic inflammatory diseases, and it is likely that almost **all chronic wounds** have biofilm communities on at least part of the wound bed². A dressing that has the ability to disrupt biofilms could therefore be a powerful tool in wound care.

Objectives

The targeted disruption of biofilms in chronic wounds is an important treatment strategy and the subject of intense research. In the present study, an in vitro model of chronic wound biofilms was developed to assess the efficacy of antimicrobial treatments for use in the wound environment.

Method

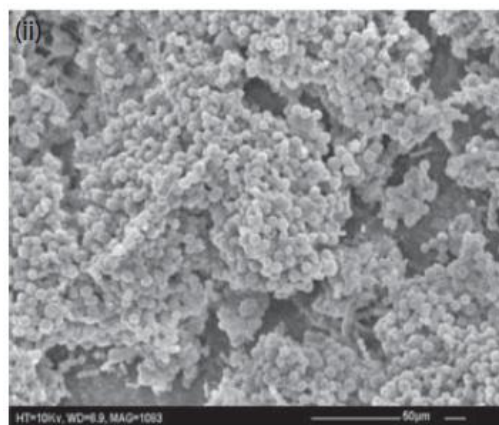
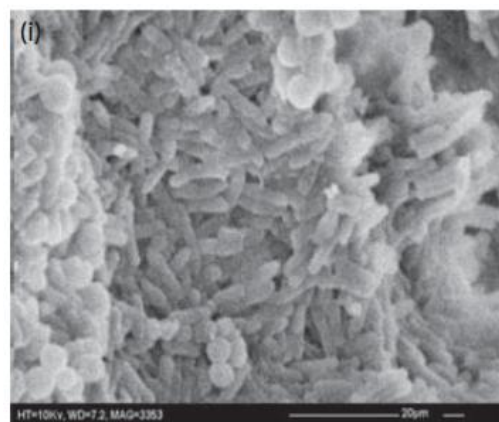
A constant depth film fermenter (CDFF) was used to develop wound biofilms *in vitro*, which were then allowed to develop over three or seven days. The dressing was applied to the culture sample and the result analysed using light microscopy and scanning electron microscopy.

Results

In testing of dressings on the generated biofilms:

INADINE® dressing showed complete and efficient killing of all the bacteria in the biofilm.

No bacteria were recovered for either 3 or 7 day generated biofilms after completion of the 7 day test for INADINE®.



Scanning Electron Microscope pictures showing a build-up of bacterial cells with time in the CDFF with formation of distinct areas of predominantly (i) bacilli and (ii) cocci within the biofilm.

- Hill et al, 2010 An in vitro model of chronic wound biofilms to test wound dressings and assess antimicrobial susceptibilities. *Journal of Antimicrobial Chemotherapy* – 10. 1093/jac/dkq105
- Phillips PL, Wolcott RD, Fletcher J, Schultz GS. *Biofilms Made Easy*. *Wounds International* 2010; 1(3): Available from <http://www.woundsinternational.com>

A 20 subject case study on the use of INADINE® demonstrates positive benefits relating to wound pain, wound progress, cost-efficiency, and patient preference³

Clinical need

Iodine is identified by the European Wound Management Association (EWMA) as **the topical wound antimicrobial with the broadest action**. Two forms of Iodine are typically found in dressings, cadexomer iodine and povidone iodine (PVP-I). A finding in several reports is that some patients being treated with cadexomer iodine (Iodosorb), have reported wound pain and discomfort ranging in severity and duration. The use of a povidone iodine dressing (**INADINE®**) was assessed as an alternative.

Comparison of commonly used antimicrobials: microbial properties						
	Gram +	Gram -	Fungi	Spores*	Viruses	
Resist**						
Chlorhexidine	+++	++	+	0	+	+
Honey	+++	+++	+++	0	+	0
Iodine	+++	+++	+++	+++	++	0
Maggots	+++	++	ND	ND	ND	0
Silver	+++	+++	+	ND	+	+
0 no effect ND no data *Endospores **Resistance						

Fig 1. Chart demonstrating iodine's broad antimicrobial action

Patient Evaluation:

20 patients with either scattered superficial wounds or reporting wound pain associated with the use of Iodosorb or other topical antimicrobial were offered the opportunity to try **INADINE®**.

90% of patients reported no product induced pain and no adherence to wound bed.

80% of the wounds improved, no wounds deteriorated and 20% were static. Preference for **INADINE®** was reported by 85% of patients comfort critical to their choice.

Conclusion

INADINE® was found useful for diverse types of wounds, reducing pain, and improving wound healing. It was also found to be easy to use, and, due to its relative cost versus alternative antimicrobials. "These findings combined with efficacy as a broad spectrum antimicrobial makes **INADINE®** an appropriate first choice throughout all clinical environments"³.

3. Cambell 2009 Product evaluation case study of povidone iodine non-adherent for outcomes: wound pain, wound trend, cost-efficiency, and patient opinion. Poster presented at CAWC

Let's Talk...

To learn more about the benefits of **INADINE®**, contact your Systagenix representative or visit www.systagenix.com