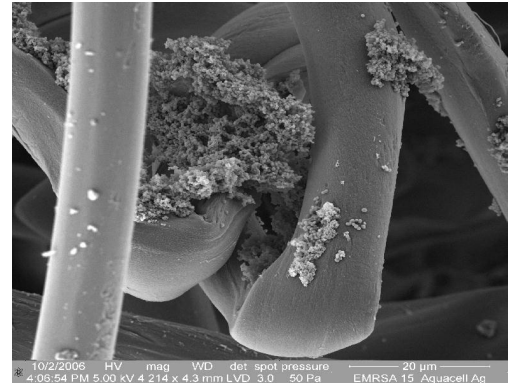


# IODOSORB – Serious about biofilm

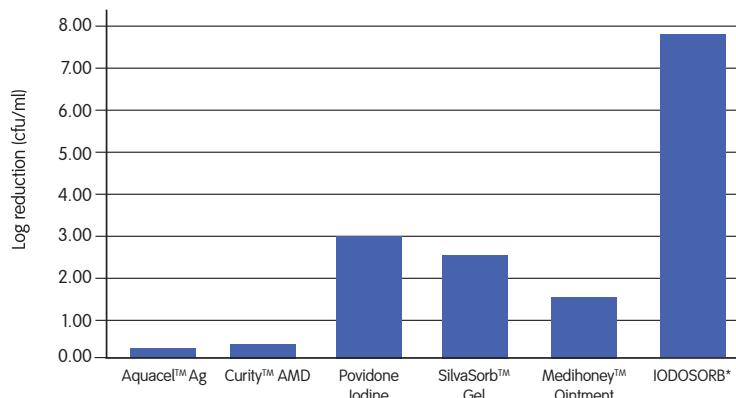
## Biofilms

- Biofilms have been shown to delay wound healing<sup>1,2</sup>, cause chronic inflammation<sup>3</sup> and are present in 60% of chronic wounds<sup>4</sup>.
- Biofilms evade both the host immune system<sup>5,6</sup>, and most antibiotics/antimicrobials<sup>7,8</sup>.
- Diagnosis is difficult. Symptoms are not obvious as seen with acute infection, but there are indirect signs and symptoms which link delayed healing with biofilm presence<sup>1,3,5,6</sup>:
  - Antimicrobial therapy failure
  - Delayed wound healing
  - Recurrent infections
  - Chronic, low level inflammation
  - Microbiological culture negative results (biofilm bacteria grow slowly therefore may be missed)
  - Mechanical intervention/ debridement aids treatment



## Antimicrobial dressing efficacy against mature *Pseudomonas aeruginosa* biofilm

Antimicrobial dressing performance after 24 hrs on fully mature *P. aeruginosa* PAO1 biofilms (*in-vitro*)<sup>8</sup>



\*In some countries IODOSORB dressing is known as IODOFLEX<sup>®</sup>

## The clinical and economic value of IODOSORB

Previous clinical evidence, including the independent Cochrane review of RCTs, indicates that IODOSORB has a significant effect on bioburden in chronic wounds<sup>9,10</sup>, accompanied by higher healing rates compared to standard care<sup>11</sup>, and reduced treatment costs and surgical revision requirements<sup>12,13</sup>.

Such evidence combined with known antibiofilm efficacy *in vitro* suggests a role for IODOSORB in successful treatment against biofilms in chronic wounds.

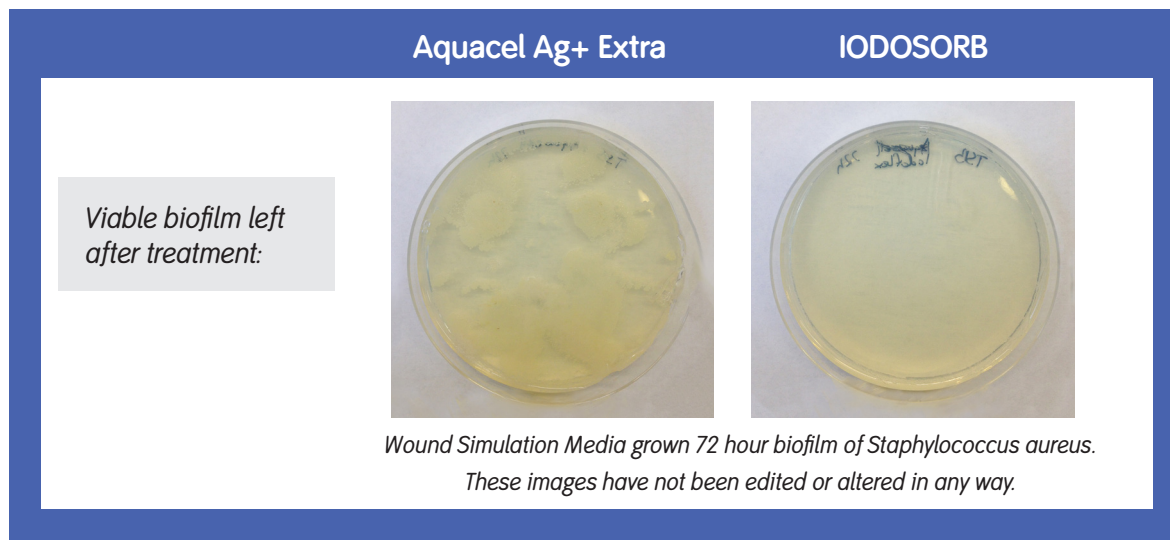
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## Copenhagen University Biofilm Test Facility: New *In vitro* testing key findings<sup>14</sup>

- Thomas Bjarsholt, Morten Alhede and Anne Kirstine Nielsen (University of Copenhagen, Faculty of Health Sciences) developed the method used in this study to investigate the efficacy of wound dressings. The method is a fast, reliable, *in vitro* assay to investigate topical treatments' action against biofilm.
- The antibiofilm activity of IODOSORB<sup>®</sup> dressing<sup>15</sup> and Aquacel<sup>™</sup> Ag+ Extra dressings were investigated in this model using both simple and clinically relevant wound simulation media.
- Mature biofilms (72 hour old) of *Staphylococcus aureus* and *Pseudomonas aeruginosa* were challenged with the dressings for 24 and 72 hours. Antibiofilm effect was then assessed by replicate plating.

Example result: Wound Simulation Media grown 72 hour biofilm of *Staphylococcus aureus*.



Overall summary of antibiofilm effect<sup>14</sup>

	Media	Treatment (hours)	Dressing	
			Aquacel Ag+ Extra	IODOSORB dressing
<i>P. aeruginosa</i>	Simple <sup>a</sup>	24	No Effect	Good Effect
		72	No/Limited Effect	Good Effect
	Complex <sup>b</sup>	24	No Effect	Limited/Good Effect
		72	No Effect	No Effect
<i>S. aureus</i>	Simple <sup>c</sup>	24	Limited Effect	Good Effect
		72	No Effect	Good Effect
	Complex <sup>b</sup>	24	No Effect	Limited/Good Effect
		72	No Effect	Good Effect

a = Simple media for cultures of *Pseudomonas aeruginosa*: 2% agar of aerobic glucose minimal medium (ABT) (Panum institute) supplemented with 0.5% glucose.

b = For cultures of *S. aureus* and *P. aeruginosa*: 2% agar of Bolton Broth (Oxoid) supplemented with 5% defibrinated and lysed horse blood (SSL, Denmark) and 45% bovine plasma (Sigma-Aldrich).

c = Simple media for cultures of *S. aureus*: 2% agar of TSB (BD Diagnostics, Sparks, MD) supplemented with 0.5% glucose.

Although wound proteins provide a higher challenge to topical antimicrobials, activity was more prominently impeded in the silver dressing.

Superior antibiofilm effect (*in vitro*) was observed with the IODOSORB dressing compared to the Aquacel Ag+ Extra in 7/8 test conditions. In 1/8 test conditions, performance was equivalent.

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