

# BIOSORB™

GELLING FIBER DRESSING



Gentle on patients.  
Strong on removal.

Key facts: *In vitro* evidence



# BIOSORB™ Gelling Fiber Dressing

## WHAT IS IT?

**BIOSORB™ Gelling Fiber Dressing is a soft, conformable non-woven dressing made from sodium carboxymethyl cellulose and strengthening cellulose Fibers.**



## HOW IT WORKS

When BIOSORB™ Dressing comes into contact with wound exudate, the absorbent dressing forms a gel which helps to create a moist wound environment.

This environment is conducive to autolytic debridement and supporting the healing process<sup>1</sup>. Specially designed to:

- Remain intact on removal
- Absorb vertically, to help protect wound edge from maceration
- Have minimal shrinkage when in contact with wound exudate

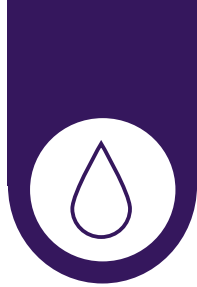
## WHEN TO USE IT

BIOSORB™ Gelling Fiber Dressing is intended for use in the management of moderate to heavily exuding acute or chronic wounds including:

- Lower leg ulcers, pressure ulcers (Stage II to IV) and diabetic ulcers
- Surgical wounds  
(e.g. post-operative, wounds left to heal by secondary intent and donor sites)
- Partial thickness burns
- Traumatic wounds (e.g. abrasions and lacerations)
- Oncology wounds (if moderate or heavily exuding, superficial or deep)<sup>1</sup>

# Absorbency

BIOSORB™ Gelling Fiber Dressing has a supportive effect in that it protects the wound edge and surrounding skin from maceration.

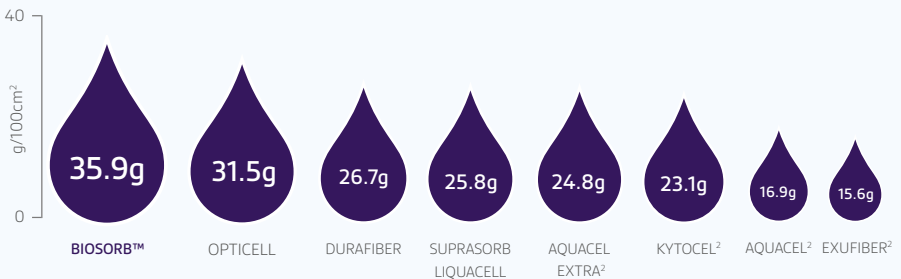


## Aim

To test the absorbency of BIOSORB™ Dressing against the top market competitors, using simulated wound fluid.

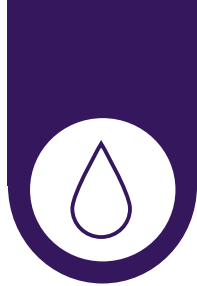
The *in vitro* data shows that BIOSORB™ Dressing is significantly (<P0.0002) more absorbent than other competitors in the market<sup>2</sup>.

Absorbency per 100 cm<sup>2</sup>



# Absorbency

Chronic wounds often produce increased levels of exudate due to a prolonged inflammatory response.

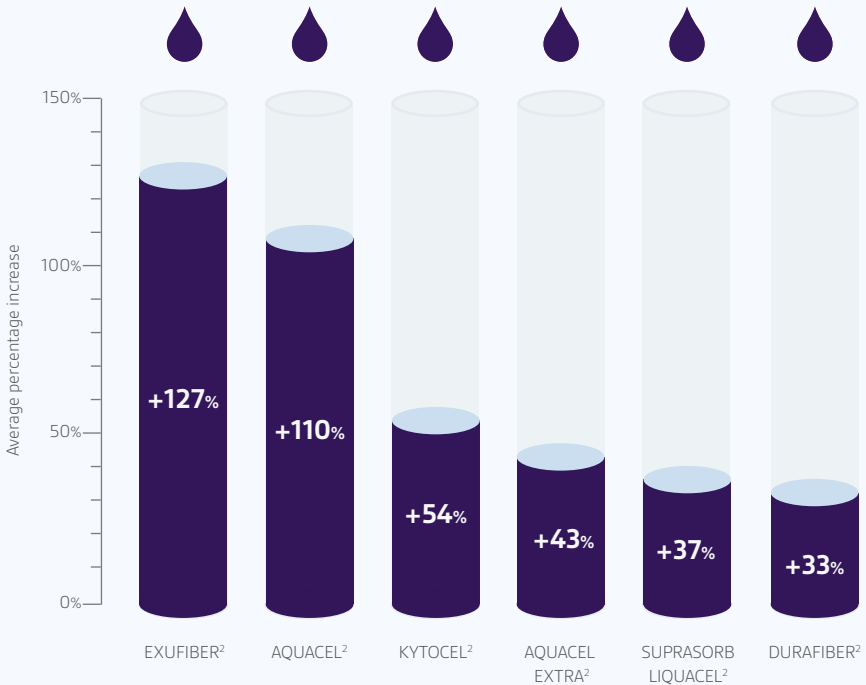


If high levels of exudate are not managed appropriately, leakage onto the peri-wound region may occur, thus increasing the risk of skin damage (e.g. maceration and excoriation) and wound enlargement.

Effective fluid management is critical to a positive healing trajectory for the patient<sup>2</sup>.

**BIOSORB™ Dressing has been demonstrated *in vitro* to have greater absorbency than:**

Average percentage increase



BIOSORB™ has shown *in vitro* to be 43% more absorbent than Aquacel Extra<sup>2</sup>

# Shrinkage

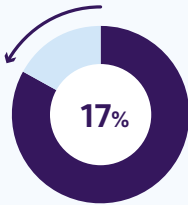
## Aim

To test the reduction in area of BIOSORB™ Gelling Fiber Dressing when hydrated, against the top market competitors.

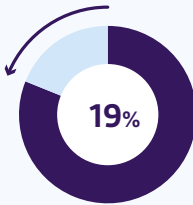


BIOSORB™ Dressing displays significantly less shrinkage on hydration compared to competitor products with a CMC composition; Aquacel (P = <0.001), Aquacel Extra (P= <0.001), Durafiber (P= <0.001), Suprasorb Liquacel (P= <0.12), Exufiber (P= <0.001<sup>2</sup>)

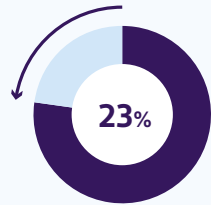
Percentage Reduction in area



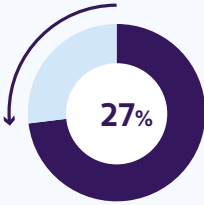
BIOSORB™



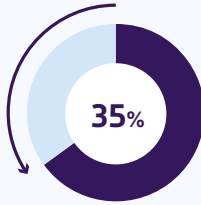
SUPRASORB LIQUACEL<sup>2</sup>



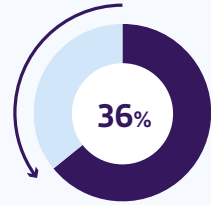
DURAFIBER<sup>2</sup>



EXUFIBER<sup>2</sup>



AQUACEL<sup>2</sup>



AQUACEL EXTRA<sup>2</sup>

Reduced shrinkage when wet may help:

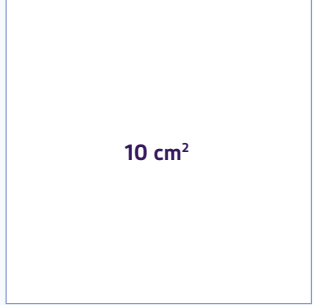
- Clinicians select the correct sizing of dressing for the wound<sup>3</sup>.
- Provide an appropriate size coverage for the wound, which may help with the ability to manage exudates effectively, through direct contact with a greater amount of the wound bed<sup>3</sup>.
- Cover the entirety of the wound, by which BIOSORB™ Dressing may help to reduce the risk of maceration of the wound edges.

# In Vitro Evidence of Shrinkage

*In vitro* testing has shown that the structural properties of BIOSORB™ Gelling Fiber Dressing help to reduce shrinkage when wet:

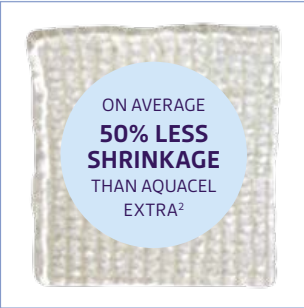


BIOSORB™



10 cm<sup>2</sup>

AQUACEL EXTRA



ON AVERAGE  
**50% LESS SHRINKAGE**  
THAN AQUACEL  
EXTRA<sup>2</sup>

AQUACEL



DURAFIBER



ON AVERAGE  
**21% LESS SHRINKAGE**  
THAN DURAFIBER<sup>2</sup>

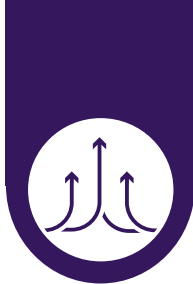
EXUFIBER



ON AVERAGE  
**33% LESS SHRINKAGE**  
THAN EXUFIBER<sup>2</sup>

# Lateral Wicking

**BIOSORB™ Dressing has a high vertical absorption of exudate, protecting the wound edge and surrounding skin from maceration<sup>3</sup>.**



This *in vitro* experiment illustrates the ability of BIOSORB™ Dressing to manage absorbed fluid and control the lateral spread of exudate.

## Aim

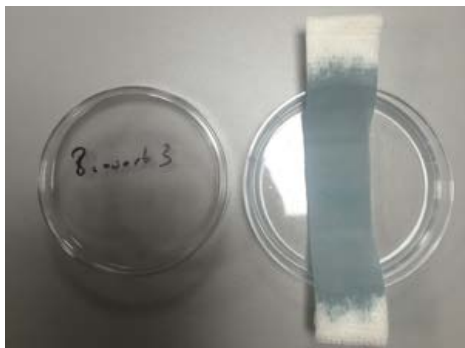
To compare the product performance of BIOSORB™ Dressing against Aquacel Extra, regarding their ability to reduce the lateral wicking of fluid.

## Method

4.5mls of dyed physiological saline solution was added to the base of six petri dishes, the dressing sample strips were then placed on top of each petri dish and gently pushed into the fluid.

## Lateral Wicking Test Data at 30 mins

### BIOSORB™



### AQUACEL EXTRA™

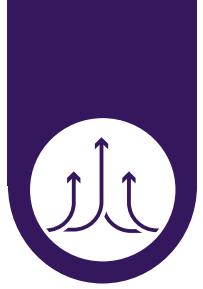


BIOSORB™ Dressing was able to prevent the lateral wicking of this fluid to the outer edges of the dressing, even up to 30 minutes.

In comparison, Aquacel Extra, when exposed to the same test fluid wicked towards the edges of the sample. The fluid reached the edges of the dressing within the 30 minute time frame<sup>3</sup>.



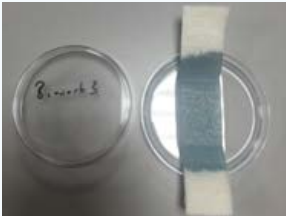
# In Vitro Lateral Wicking Test Data Images



*In vitro* tests have shown that BIOSORB™ Dressing is able to reduce the lateral wicking of fluid compared with Aquacel Extra<sup>3</sup>.

## BIOSORB™

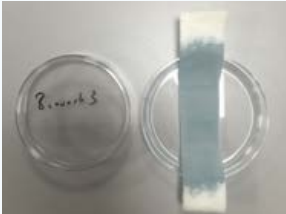
Time: 0



Time: 10mins



Time: 20mins



Time: 30mins



## AQUACEL EXTRA™

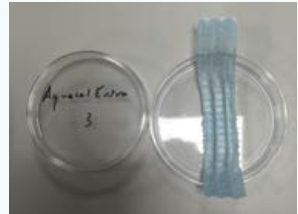
Time: 0



Time: 10mins



Time: 20mins



Time: 30mins



# Compression

Gelling Fiber wound dressings are often used in conjunction with compression therapy.



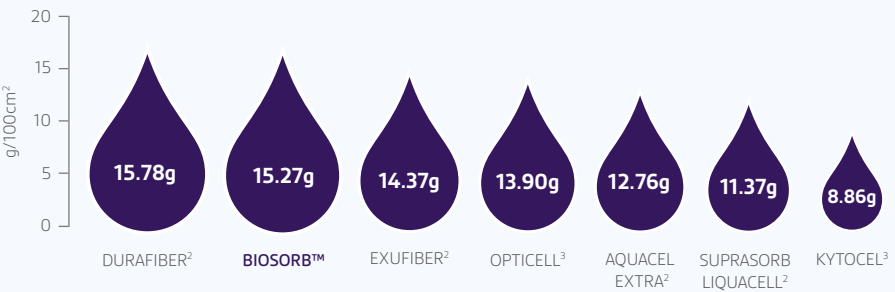
This *in vitro* study looks at the ability of gelling Fiber wound dressings to absorb fluid under compression.

## Aim

To ascertain the absorbency under compression of BIOSORB™ Dressing against leading competitor dressings.

**BIOSORB™ Dressing was able to effectively absorb significantly more fluid under a clinically relevant level of pressure (40mmHg) compared to Opticell (P= <0.05), KytoCel (P= <0.001), Suprasorb Liquacel (P= <0.001) and Aquacel Extra (P= <0.001)<sup>3</sup>.**

Absorbency under compression per 100 cm<sup>2</sup>



BIOSORB™ Dressing was able to absorb a similar level of fluid in comparison to Durafiber and Exufiber<sup>2</sup>.

# Compression

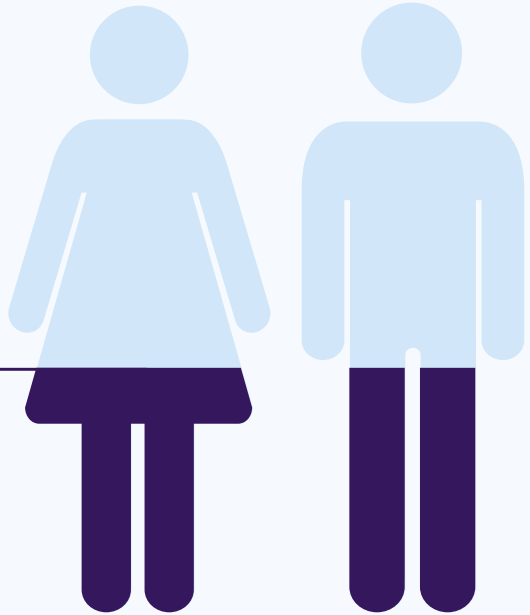
Survey:  
Pain on removal



In a survey of 2,018 patients:

**40.3%**

REPORTED PAIN AT  
DRESSING CHANGE TO  
BE THE WORST PART OF  
LIVING WITH A WOUND.



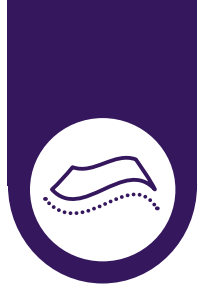
That's why BIOSORB™ Dressing is designed to make life easier for patients.

Unlike many other gel-based Fibers, BIOSORB™ Dressing's unique construction is designed to remain intact on removal, to minimize pain for patients and cause less inconvenience for you when removing their dressing.

Price, et al. Dressing-related pain in patients with chronic wounds: an international patient perspective. IWJ 2008, Vol. 5(2): 159–171.

# Conformability

BIOSORB™ Dressing is a soft, conformable gelling Fiber dressing.



## Aim

To investigate the conformability of two dressings, Aquacel Extra and BIOSORB™ Dressing, using microbiological techniques.

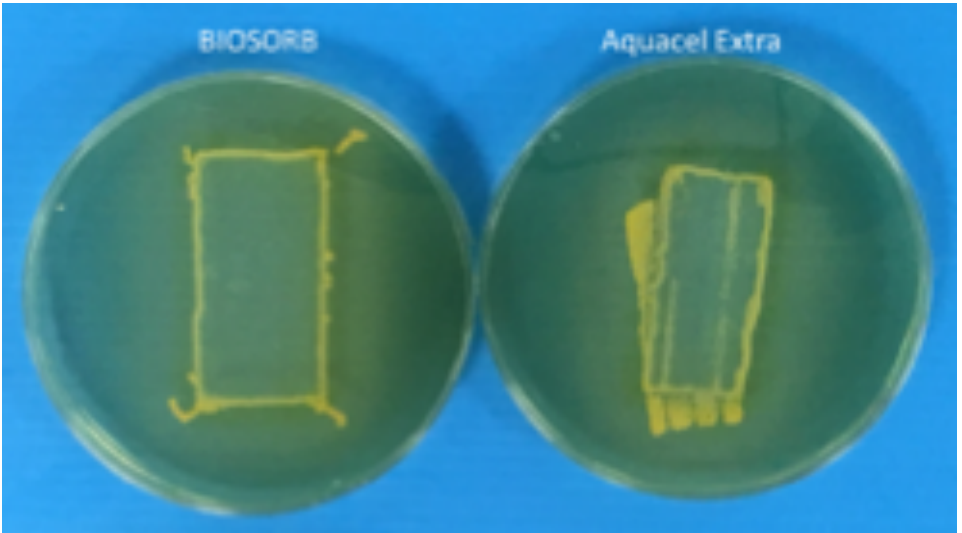


Figure 1. *S. aureus* on C.L.E.D

## Method

Agar plates were prepared following manufactures instructions. The dressing samples were then saturated with spiked simulated wound fluid and transferred to agar plates. Samples were incubated for 24 hours and growth patterns on the agar photographed.

Bacteria grew through both gelling Fiber dressings and contaminated the agar surface around the edges of the dressing samples. This was expected as neither dressing contained any antimicrobial agent.

# Conformability



## Result

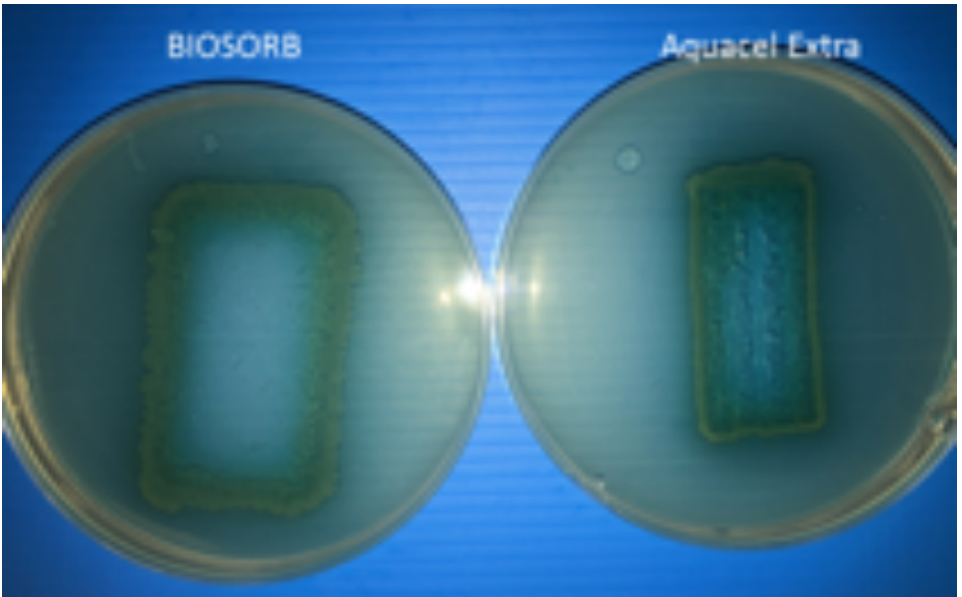
- Contact area under BIOSORB™ Dressing samples appeared clear of visible growth.
- Visible colonies did not form under the BIOSORB™ Dressing as it was in good contact with the agar surface so there was no space for growth.
- Contact area under Aquacel Extra, lines of bacterial colonies/growth were observed<sup>3</sup>.

Aquacel Extra, lines of bacterial colonies/growth corresponded with the presence of stitching on the dressing.

It appears that the stitching affects the conformability of the dressing, leaving spaces between the dressing and agar surface. It is within these spaces that the bacteria were able to grow into visible colonies on the agar surface<sup>3</sup>.

The effect was seen for all combinations of bacteria and media but certain combinations were easier to see/photograph.

Figure 2. *P. aeruginosa* on nutrient agar



Photos were taken against different backgrounds to find optimum conditions for visualisation (see Figures 1-2).

# Key Facts

## BIOSORB™ Gelling Fiber Dressing



BIOSORB™ Dressing **is significantly more absorbent** than other competitors in the market<sup>2</sup>.



BIOSORB™ Dressing **has minimal shrinkage** when in contact with wound exudate<sup>2</sup>.



BIOSORB™ Dressing **has a high vertical absorption** of exudate, protecting the wound edge and surrounding skin from maceration<sup>3</sup>



BIOSORB™ Dressing **was able to effectively absorb significantly more fluid under a clinically relevant level of pressure**<sup>2,3</sup>



BIOSORB™ Dressing **is a soft, conformable** dressing<sup>1</sup>.

### References

1. BIOSORB™ IFU Text
2. Waite A, Delury C, Regan S, An in vitro evaluation of the physical properties of a new gelling Fiber dressing, 2016, Presented at EWMA 2016.
3. Data on File.



A gelling fiber that holds its shape to the end.



An Acelity Company

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