

# Antimicrobial

## Dermal Template

 **endoform**<sup>®</sup> Antimicrobial

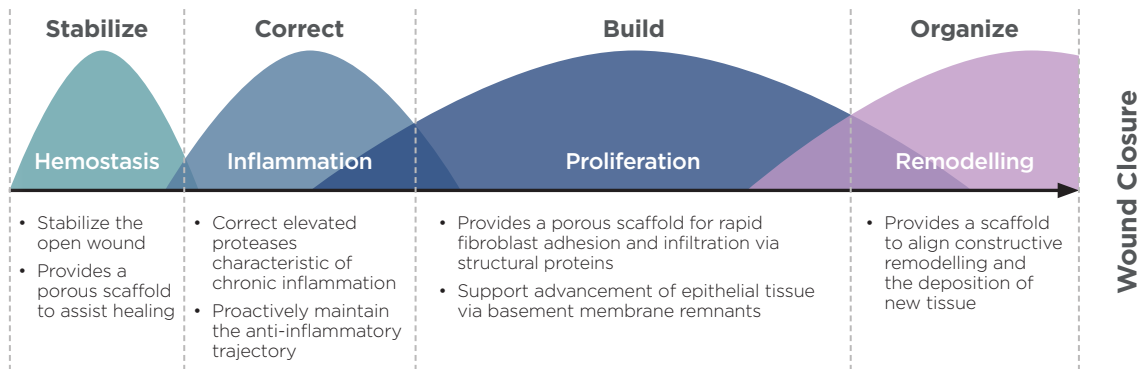
All the benefits of a unique extracellular matrix (ECM) plus ionic silver which supports all phases of healing

- Broad spectrum antimicrobial activity for up to 7 days
- Prevents biofilm formation
- Non-cytotoxic to dermal cells

## Antimicrobial Dermal Template

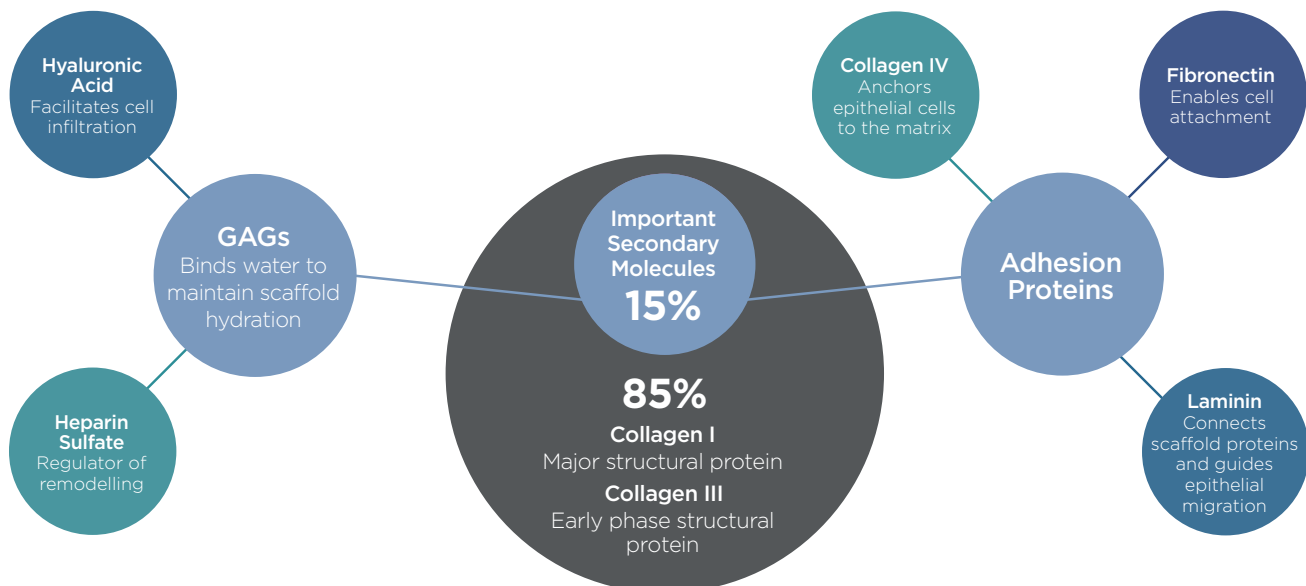
**Endoform<sup>®</sup>'s unique ECM technology is designed for all phases of healing to stabilize, correct, build and organize tissue in acute and chronic wounds.<sup>1</sup>**

**Endoform<sup>®</sup> can be used at all phases of wound management**



### Endoform<sup>®</sup> includes 148 secondary molecules that are important for healing

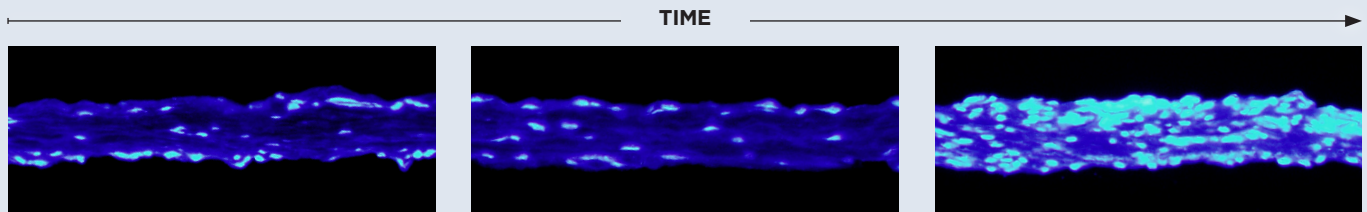
The composition of **Endoform<sup>®</sup>'s** ECM enables it to interact with patients' cells during the phases of healing. **Endoform<sup>®</sup>** is 85% collagen and 15% important secondary molecules including 148 structural and adhesion proteins, and glycosaminoglycans (GAGs)<sup>2</sup>. **Endoform<sup>®</sup>** only contains components that are found in tissue ECM.



## Endoform® provides a biologically accurate ECM scaffold

Endoform® is minimally processed so the ECM is not damaged. It provides a biologically accurate, porous structure that supports rapid epithelial and fibroblast infiltration. Over time the scaffold is completely remodeled as new tissue is laid down.

### Wound model demonstrating cell infiltration and adhesion (light blue) onto the Endoform® scaffold (dark blue) during healing<sup>3</sup>



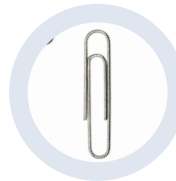
Images show DAPI (a fluorescent stain, diamidino phenylindole) stained Endoform® infiltrated with human fibroblasts cells after 0.5, 5 and 10 days. Images at 20x magnification.<sup>3</sup>

### Natural molecular structure

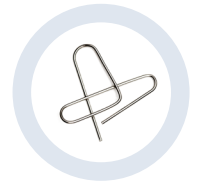
Endoform® preserves the natural form of its molecular components.

The paperclip analogy demonstrates how loss of structure results in loss of functionality.

Preserved Structure and Function for Use



Altered Structure and Loss of Function

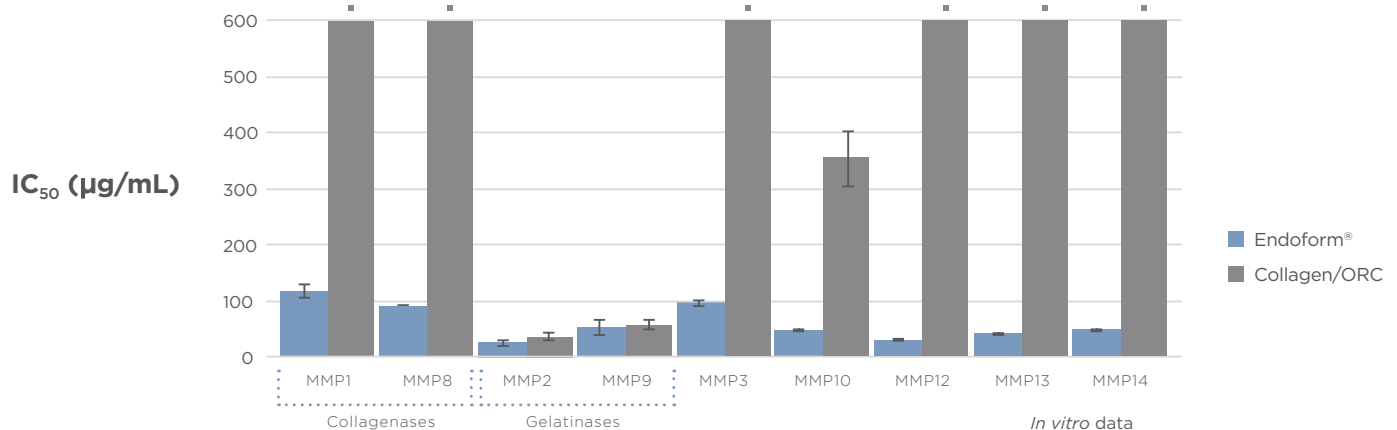


## Endoform® helps indicate the presence or absence of proteases and restores balance

Chronic wounds are characterized by elevated wound proteases that limit healing by digesting important dermal proteins.












While other dressings may only modulate the gelatinases MMP2 and MMP9, **Endoform®** has been shown to target multiple wound proteases including MMP1, MMP8, MMP13, MMP3, MMP10, MMP2, MMP9, MMP12, MMP14 and neutrophil elastase.<sup>4</sup> If **Endoform®** is not visible in the wound bed at the time of reapplication, this can indicate elevated wound protease activity. However, if **Endoform®** is visible, this can indicate that protease balance has been restored.<sup>5</sup>

### Endoform® shows significantly greater modulation of wound proteases vs Collagen/ORC<sup>4</sup>



## Endoform® Antimicrobial provides broad spectrum antimicrobial activity for up to 7 days

Unlike some existing collagen silver dressings that have a limited duration of up to 3 days, **Endoform® Antimicrobial** provides sustained protection from microbial contaminants for up to 7 days, including drug resistant strains, yeasts and molds.<sup>6</sup>

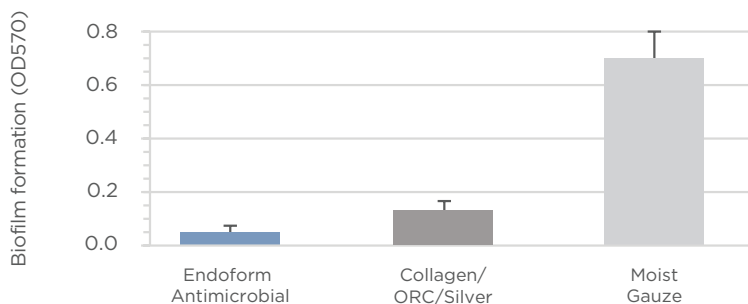
	Species	Day 7
Gram positive	<b>Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA)</b>	
	<i>Staphylococcus epidermidis</i> (coagulase negative)	
	<i>Streptococcus pyogenes</i> (Group A, β-hemolytic)	
Gram negative	<b>Vancomycin Resistant <i>Enterococcus faecalis</i> (VRE)</b>	
	<i>Pseudomonas aeruginosa</i>	
	<i>Escherichia coli</i>	
	<i>Acinetobacter baumannii</i>	
Yeasts & molds	<i>Aspergillus brasiliensis</i> ( <i>niger</i> )	
	<i>Candida albicans</i>	
	<i>Candida glabrata</i>	
	<i>Candida parapsilosis</i>	

   - no quantifiable organism

## Endoform® Antimicrobial prevents biofilm formation

Biofilm formation is associated with delayed wound healing and an increased risk of infection for the patient.

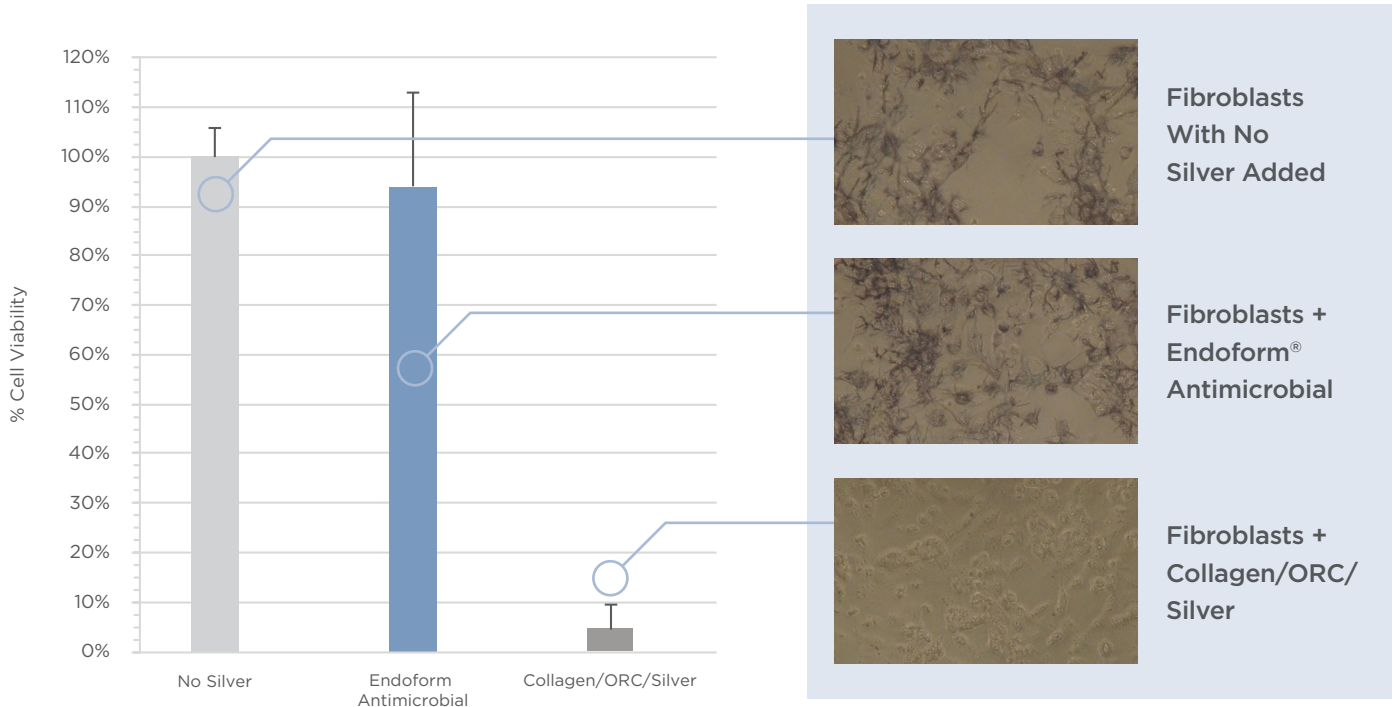
**Endoform® Antimicrobial** has been shown to prevent the formation of biofilm.<sup>7</sup>



An *in vitro* model of polymicrobial biofilm prevention following 24 h exposure of the test sample

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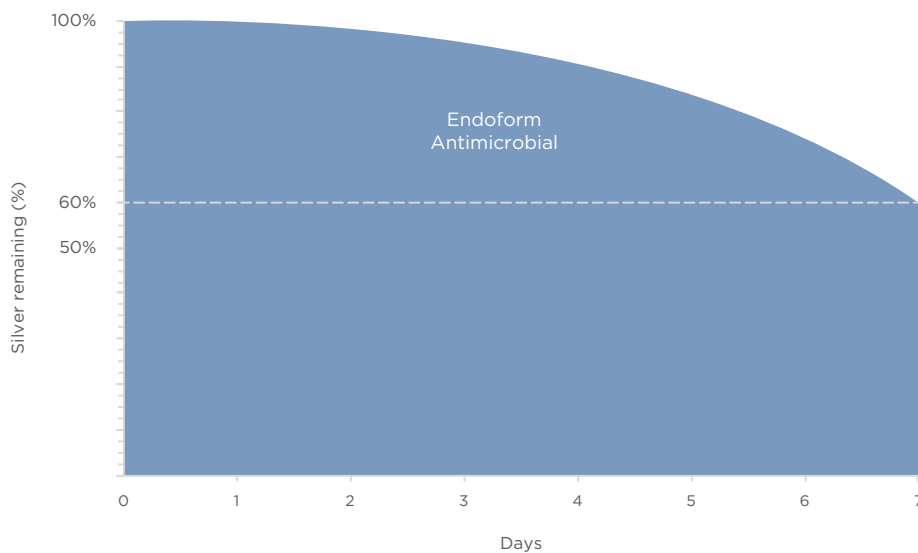
## Endoform<sup>®</sup> Antimicrobial is non-toxic towards fibroblasts<sup>8</sup>



Cell viability assay; 3T3 fibroblasts exposed to test samples for 24 hours

## Why is Endoform<sup>®</sup> Antimicrobial non-cytotoxic and long acting?<sup>9</sup>

The ionic silver present in **Endoform<sup>®</sup> Antimicrobial** is bound to the matrix for up to seven days to provide sustained antimicrobial protection without cytotoxicity.



# Antimicrobial Dermal Template

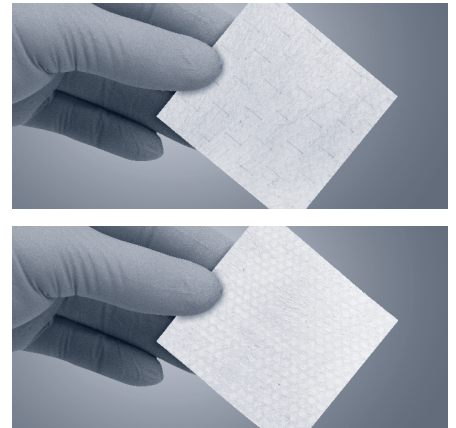


## Ordering information

Endoform <sup>®</sup> Antimicrobial Dermal Template - Fenestrated			
Stock no.	Product Size	Quantity/Box	HCPCS
629312	2x2" (5cm x 5cm) fenestrated	10	A6021
629314	4x5" (10cm x 12.7cm) fenestrated	10	A6022

Endoform <sup>®</sup> Antimicrobial Dermal Template - Non Fenestrated			
Stock no.	Product Size	Quantity/Box	HCPCS
629311	2x2" (5cm x 5cm) non-fenestrated	10	A6021
629313	4x5" (10cm x 12.7cm) non-fenestrated	10	A6022



## Indications For Use:

**Endoform<sup>®</sup> Antimicrobial Dermal Template** is indicated for the management of wounds including, partial and full thickness wounds, pressure ulcers, venous ulcers, diabetic ulcers, chronic vascular ulcers, tunneled/undermined wounds, surgical wounds (donor sites, grafts, post Moh's surgery, post laser surgery, podiatric, and wound dehiscence), traumatic wounds (abrasions, lacerations, first and second degree burns, and skin tears), and draining wounds.

Endoform<sup>®</sup> Antimicrobial, like other silver-containing products, may darken upon storage, after hydration in saline, when exposed to light, or when in contact with body fluids and tissues. This darkening does not affect product performance.

1. Bohn G. Proactive and early aggressive wound management: A shift in strategy developed by a consensus panel examining the current science, prevention and management of acute and chronic wounds. *Wounds*. 2017 Nov; 29(11):S37-S42.
2. Data on file.
3. Lun, S., S. M. Irvine, K. D. Johnson, N. J. Fisher, E. W. Floden, L. Negron, S. G. Dempsey, R. J. McLaughlin, M. Vasudevaramurthy, B. R. Ward and B. C. H. May (2010). "A functional extracellular matrix biomaterial derived from ovine forestomach." *Biomaterials* 31(16): 4517-4529.
4. Negron, L., S. Lun and B. C. H. May (2014). "Ovine forestomach matrix biomaterial is a broad spectrum inhibitor of matrix metalloproteinases and neutrophil elastase." *Int Wound J* 11(4): 392-397.
5. Champion S, Bohn G (2015). "Dressing appearance at change can give insight into dressing effectiveness in the wound". Symposium on Advances in Skin & Wound Care - Spring, New Orleans, LA
6. Data on file.
7. Data on file.
8. Data on file.
9. Data on file.

**RX Only.** Prior to use, be sure to read the entire Instructions For Use package insert supplied with the product.

**For product questions, sampling needs, or detailed clinical questions concerning our products in the US, please call 1-860-337-7730**

HCPCS are for reference only and subject to change.

Endoform<sup>®</sup> is a registered trademark of Aroa Biosurgery Limited.



Endoform<sup>®</sup> Dermal Template is marketed in the USA by Appulse. [www.appulsemed.com](http://www.appulsemed.com)



Manufactured for:  
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