BOUND TO THE DRESSING SUBSTRATE WHICH ACTS AS A PHYSICAL BARRIER OF PROTECTION AGAINST
BIOGUARD®’S CATIONIC BIocide, polyDADMAC, IS BOUND TO THE DRESSING SUBSTRATE. ADVERSELY AFFECTING WOUND CELLS, WHICH COULD OTHERWISE DELAY WOUND HEALING.8

DON’T JUST GUARD. BIOGUARD®

BIOGUARD® Barrier Dressings have a cationic biocide – polyDADMAC – bound to the dressing substrate which acts as a physical barrier of protection against a broad spectrum of opportunistic pathogens including MRSA.

IT’S NON-LEACHING:

BIOGUARD®’s cationic biocide, polyDADMAC, is bound to the dressing substrate. It does not leach, causing a zone of inhibition on the dressing, which can lead to resistance or toxicity issues to healthy cells.7

IT’S NON-RESISTANT:

BIOGUARD® is able to provide >99.999% killing of pathogens within the dressing without adversely affecting wound cells, which could otherwise delay wound healing.2

IT’S NON-TOXIC:

BIOGUARD®’s cationic biocide, polyDADMAC, has a high charge density and molecular weight – up to 100x larger than PHMB. Due to its size, bacteria do not develop resistance.8

Have confidence in BIOGUARD® Barrier Dressings for your patient care and protection against opportunistic pathogens and wound infection.

STAND GUARD AGAINST OPPORTUNISTIC PATHOGENS COST-EFFECTIVELY WITH BIOGUARD® BARRIER DRESSINGS

• Non-toxic antimicrobial activity
• A physical barrier against MRSA
• Does not induce bacterial resistance

STAND GUARD

“WOUND INFECTION, BY THE NUMBERS:”

Healthcare-associated infections (HAIs) including SSI’s and MRSA affect the healthcare system.

Approximately 200,000 Canadians per year are affected by HAIs - more than 8,000 result in death.4

Healthcare-associated MRSA infection increased more than 1,000% from 1995 to 2009.5

More than 50% of all HAIs are caused by bacteria resistant to at least one type of antibiotic.6

About 9% of children and 10% of adults in Canadian hospitals have an HAI at any given time.1

As many as 70% of some types of HAIs could reasonably be prevented if infection prevention and control strategies are followed.8

8/10 wound bacteria per 40 l/air is released with each gauze dressing change increasing potential for cross contamination.9
CASe 2 – lOweR extReMIty GRAft SIteS MANAGeD wIth BIOGUARD® (FiguRes 3, 4 & 5)

• Marked decrease the incidence of infection and delaying wound healing. BIOGUARD® Barrier Dressings offer a broad spectrum of protection against opportunistic pathogens when managing patients’ surgical incisions and wounds.

When managing your patients’ wounds, the last thing you want to worry about is opportunistic pathogens causing infection and delaying wound healing. BIOGUARD® Barrier Dressings offer you broad spectrum barrier protection against opportunistic pathogens when managing your patients’ surgical incisions and wounds. Through a patented manufacturing process, PolyDADMAC, an advanced cationic biocide, is bound to the dressing substrate providing a physical barrier of protection against opportunistic pathogens including MRSA.

Cationic Biocides

Cationic biocides are commonly used to kill pathogens. PolyDADMAC shares the same compound class of biocides used in other gauze based dressings such as PHMB (poly hexadine methyl biguanide), but with two key differences:

• polyDADMAC is 100x larger than PHMB. The larger the molecule the lower the chance of the pathogen developing resistance to the biocide.

• Unlike PHMB, which leaches from the dressing, polyDADMAC is intrinsically bound to the dressing substrate minimizing the risk of leaching and toxic issues to healthy cells — which can delay healing.

What about size?
Most causes of antimicrobial resistance occur when the active component enters into the cell of the pathogen. With a high molecular weight — up to 100x larger than PHMB — PolyDADMAC simply won’t fit through holes of the damaged cell walls allowing bacterial cells to become resistant.

In this standard antimicrobial resistance assay (See Fig 2), consistent exposure to PolyDADMAC for a prolonged period of time — showed no resistance to the biocide treated substrate. Throughout this 10-round adaptation testing, bacterial cells were repeatedly exposed to PolyDADMAC with no resistance.

Method of Action
Cationic biocides act through a physical mechanism of action. They attract bacterial cells and bind directly to the cellular envelope and physically disrupt the cell wall structures causing the membrane to fragment, leading to cell death and disruption.

Additionally, the higher the charge density the more likely the biocide effects will maintain their effectiveness in high levels of exudate or other bodily fluids.

The Importance of Non-Leaching for Healthy Healing
Leaching — For wounds that are either infected or critically colonized, bacterial control and having an active leach into the wound environment is paramount. The main goal of wound dressing is to prepare and protect the wound environment for healthy healing.

Non-Leaching — For wounds that are on tracks for healthy healing, dressings should be non-leach to healthy cells and should not leak into the wound. Dressings with an antimicrobial active bound to the dressing substance, such as BIOGUARD®, should be considered. (See Fig 3)

Bacterial cells were repeatedly exposed to 3 ml of PBS containing 1 x 10^4 cfu/ml of each strain at 37°C for 24 hrs. After exposure, residual bacteria were enumerated and expressed as % reduction of colony forming units (CFU) compared to 100%.

Table 1: Effect of PolyDADMAC on the Growth of Various Bacterial Strains

**Table 1: Effect of PolyDADMAC on the Growth of Various Bacterial Strains**

<table>
<thead>
<tr>
<th>Bacteria</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Listeria monocytagenes</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Staph. aureus</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Pseudomonas aeruginosa</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>E. coli</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Klebsiella pneumoniae</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Enterococcus faecalis</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Clinical MRSA</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Gram +ve Bacteria</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Gram -ve Bacteria</strong></td>
<td>&lt;0.0001%</td>
</tr>
<tr>
<td><strong>Bacteriophage MS-2</strong></td>
<td>&lt;0.0001%</td>
</tr>
</tbody>
</table>

**Note:** % Reduction is greater than 99.9999% (100,000x more effective)