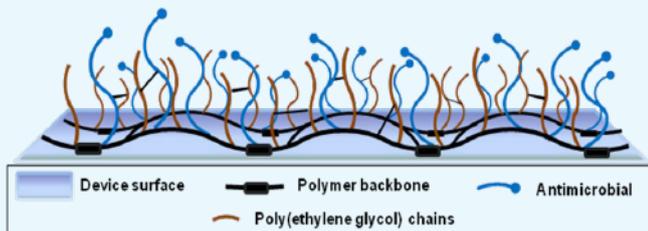


AvertPlus™ Surface Active Antimicrobial Coating

BioInteractions have developed the dual functional **AvertPlus™ Surface Active Antimicrobial Coating**, specifically designed to reduce the incidence of device related infections.

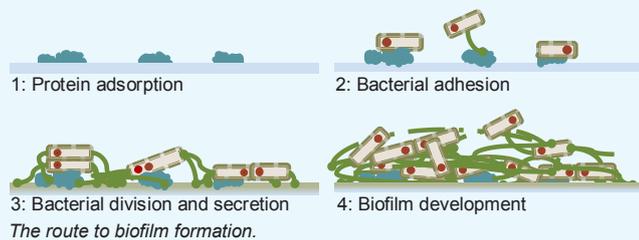
AvertPlus™ is an advanced antimicrobial coating combining a non-thrombogenic component with an antimicrobial component and offers the best in technical achievement and technological advancement. The unique polymer formulation of **AvertPlus™** is **biocompatible, lubricious and antimicrobial**.



Schematic representation of **AvertPlus™** Surface Active Antimicrobial Coating.

The Clinical Problem

The adhesion of bacteria onto an implantable medical device (or to proteins already deposited on the device) provides a suitable breeding ground for bacterial colonisation and biofilm formation.



The bacteria, contained by the biofilm, rapidly divide and extend along the device surface. Within the biofilm these bacteria are 50-500 times less susceptible to antibiotics, and can migrate into the bloodstream, thereby spreading infection.

Approximately 3.5 million patients are affected by device-related infections each year in hospitals across the USA and Europe. Depending on the patient, the device and the infection, typical mortality rates may be as high as 25%.

AvertPlus™ Surface Active Antimicrobial Coating

AvertPlus™ inhibits protein deposition and bacterial adhesion, thereby **preventing biofilm formation**. The active antimicrobial component, poly(hexanide), is co-polymerised with non-thrombogenic poly(ethylene glycol) (PEG) and with stabilising monomers to provide a durable, **non-leaching** coating assembly, which displays a **contact-kill** mechanism for antimicrobial activity and has demonstrated **long term protection** against infection.

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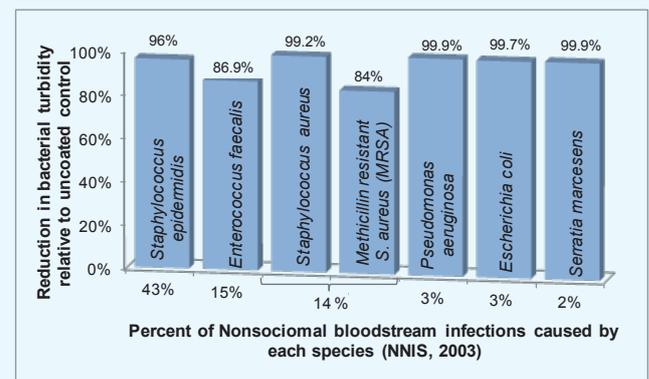
www.biointeractions.com

Mode of Action

- Polarised antimicrobial agent binds bacterium
- Binding induces separation of bacterial membrane
- Cell disruption exposes contents of the cell
- Bacterial cell death occurs

Spectrum of Activity

It is imperative that the antimicrobial agent employed displays a **broad spectrum of activity** against a variety of bacterial species and a **prolonged antimicrobial effect**. This is becoming increasingly important as bacterial strains become progressively resistant to antibiotic treatment.



Spectrum of activity for **AvertPlus™**. Note that reduction in turbidity correlates to but does not precisely represent the log reduction in bacterial load, and we are working on moving to log reduction figures. Testing performed outside of BioInteractions demonstrates a 3-log¹⁰ reduction for S. aureus and a 5-log¹⁰ reduction for C. albicans biofilms after 30 days in plasma.



AvertPlus™ is also non-thrombogenic, demonstrating a significant reduction in platelet adhesion compared to an uncoated catheter, which persists beyond 30 days.

AvertPlus™ is currently undergoing clinical investigation. BioInteractions is committed to the advancement of healthcare and welcomes interest in the **AvertPlus™ Surface Active Antimicrobial Coating**.

