



Hospitals and Medical Facilities Pathene™ Inc.

Benefits of Pathene™

- Water-based Antimicrobial
- Unique bound technology
- Long-term residual protection (protects for 90 days)
- Protection for porous or non-porous surfaces
- SAFE - uses no poison, heavy metals, or triclosan. Non leaching and does not volatilize.
- Mechanically killing bacteria means Pathene™ technology cannot create super bugs
- prevents the creation of biofilms
- stops the proliferation of harmful microbes
- suitable for use on all medical surfaces including textiles and areas that are frequently forgotten about.
- compliments the routine cleaning procedures already in place such as cleaning and disinfecting.

Clean

Disinfect

Protect

- The cleanliness of healthcare facilities is an important component in the provision of clean safe care. Compared to 11 other developed countries, the World Health Organization identified Canada as having the highest national prevalence of Hospital acquired infections in 2008 at 11.6%. This means that 1 in 12 adults and 1 in 10 children admitted to a Canadian Hospital have developed a Hospital acquired Infection.
- Each year, about 8000 Canadians die from hospital-acquired infections; 220,000 others get infected. Treatment is more costly than prevention ; estimated costs for 2004 were \$82 million. Costs are estimated at \$129 million for 2010
- We recommend a 3 step process to achieve the highest standard of cleanliness. 1. **CLEAN** visibly soiled areas 2. **DISINFECT** to kill viruses and bacteria that are not visible to the naked eye 3. **PROTECT** by applying Pathene500 and inhibiting the growth of bacteria, mold, mildew, algae and fungus on the surfaces between cleaning periods.
- Without a micro-biostatic antimicrobial coating you're simply cleaning the surfaces periodically and the surface is immediately unprotected afterward. Hosting and transmission of germs occurs as soon as the surface is utilized, leading to the immediate return of microbes and the potential growth of harmful colonies, bio-films, and cross contamination in general.



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Why Choose Pathene?



Here is What the research shows:

The emergence of antimicrobial resistance as well as multidrug-resistant bacterial strains, biofilms and HAI's continue to pose a risk to public health despite the routine cleaning procedures currently being used. Hospital's and Medical Facilities that are not Pathene™ Protected, are left vulnerable to the proliferation of a host of microbes between cleaning intervals.

During routine cleaning in medical facilities, several areas/textiles that harbour harmful bacteria, go untreated. Studies have shown that areas that are often overlooked during routine cleaning are hospital separation curtains, stretcher wheels, furniture, and washbasins. Studies indicate that microorganisms such as *Staphylococcus aureus*, *Pseudomonas aeruginosa* can contaminate hospital surfaces, including hospital curtains at concentrations sufficient for transmission, and that these pathogens survive and persist for extended periods despite attempts to disinfect. While considerable effort is placed on the cleaning and disinfecting of non-porous or high touch environmental surfaces, much less effort is placed on the procedures for cleaning and decontaminating porous, soft surfaces or healthcare textiles. Pathene™ has proven efficacy in protecting both hard and soft surfaces as seen below. Efficacy for Virus protection available upon request.

Microorganism	Test surface	Test	Result (%reduction unless indicated otherwise)
<i>Pseudomonas aeruginosa</i>	Glass	AOAC 961.02	No growth after 48H
	Bleached sheet	AATCC 100-1993	94.89% (day 7)
	Unbleached sheet	AATCC 100-1993	99.99% (day 7)
	Cotton/poly	AATCC 100-1993	75.71% (day 7)
<i>Staphylococcus aureus</i>	Glass	ASTM E1054	99.99%
	AOC Resin Panels	ASTM E1054	68.02% (90.83% inhibition)
	Filter material	AATCC 100-1993	99.99%
	ABTECH (smart sponge)	AATCC 147-1993	99.99% (99.99% inhibition)
	Bleached sheet	AATCC 100-1993	99.90% (day 7)
	Unbleached sheet	AATCC 100-1993	99.99% (day 7)
	Cotton/poly	AATCC 100-1993	99.99% (day 7)
	Carpet swatch	AATCC 100-1993	100%
	All cloth challenge fabrics	AATCC 100-1993	53.30% (72.00% inhibition)
	Cotton socks after 50 wash-dry cycles	AATCC 6538	99.7%
<i>Escherichia coli</i>	Polypropylene, polyester, rayon	AATCC 100-1993	99.99%
	Cotton	AATCC 100-1993	99.93% (99.87% inhibition)
	Filter materials	AATCC 100-1993	99.00%
	Bleached sheet	AATCC 100-1993	98.36% (day 7)
	Unbleached sheet	AATCC 100-1993	99.99% (day 7)
	Cotton/poly	AATCC 100-1993	99.99% (day 7)

Study conducted at Ryerson University in 2014 by Dr. Daniel Foucher regarding the efficacy of Pathene500 for preventing biofilm formation(microbial colonization).



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Virus titer before application: 7.8	Effect of Am-500 (20%)		
	1 minute	10 minutes	60 minutes
Virus titer after application*	≤ 2.8	≤ 2.1	≤ 1.8
Decrease in virus titer* (log)	≥ 5.0	≥ 5.7	≥ 6.0

*Logarithmic TCID value of virus in 100 μ l

G. DECISION

The efficacy of 20% Am-500 as a SURFACE PROTECTOR against influenza A (H1N1) has been investigated in accordance with the TS EN 14476 (March 2007) standards of Turkish Standards Institution (TSE) and it has been found that the aforementioned product has decreased the virus titer 5 log, 5.7 log and 6 log respectively in a clean environment when applied for 1, 10, 60 minutes at room temperature (20°C). According to the international standards, a disinfectant must decrease the virus titer 3 log in order to conclude that it is an efficient disinfectant. The results of this experiment indicate that Am-500 is an EFFICIENT SURFACE PROTECTOR against Influenza A/H1N1.

Study conducted in Istanbul Turkey by Dr Salem Badur in September 2009 regarding the anti-viral activity of AM500, also referred to as Pathene500.





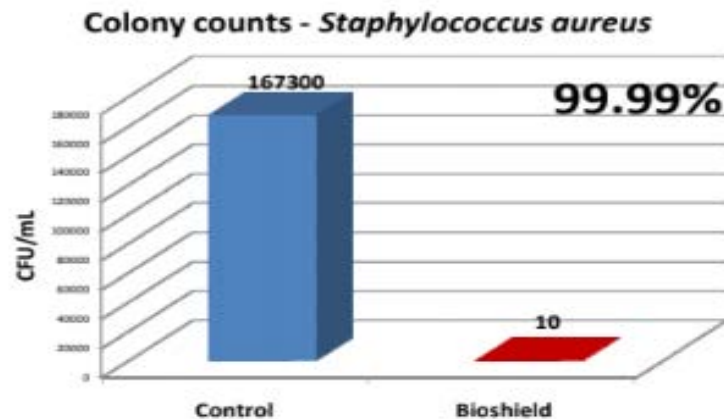
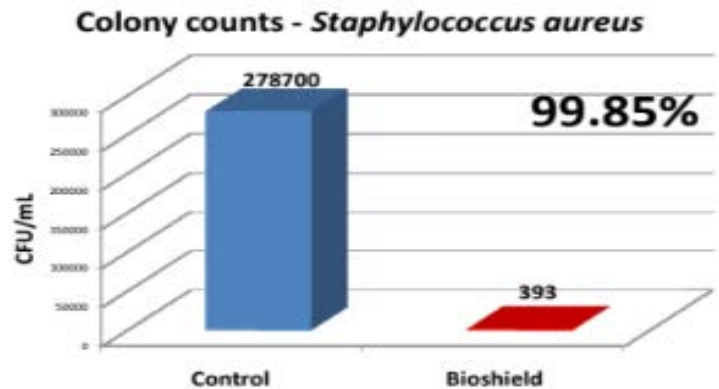
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Fig 3. Results of repeat experiments (at least 10 replicates each) on laboratory cultures.



Study, Filtration Assay for Determining Antimicrobial Activity of Surface Bound Antimicrobial Agents, conducted at Ryerson University by Dr. Daniel Foucher. These results demonstrate the efficiency with which Bioshield, also referred to as Pathene500, inhibits the growth of *Staphylococcus Aureus*.