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Alta™ and BioAM™ Antimicrobial

Alta™/BioAM™ utilizes ÆGIS Microbe Shield® technology; the following is an excerpt from the ÆGIS® article titled, "A Review: Antiviral Agent Testing Results ÆGIS Microbe Shield® Technology"

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INTRODUCTION

Antiviral agents for use on inanimate surfaces have been the subject of research and commercial activities since the 1950s.

Within this body of work the targets for inactivation have been hypothesized. Viruses are made up of a lipoprotein envelope with characteristics of a typical unit membrane, a proteinatious capsid, and the RNA or DNA genetic material. These structures and their chemical make up offer targets for antiviral agents. The generally accepted hypothesis on mechanisms of inactivation is based on whether viruses are lipophilic (enveloped viruses such as herpes simplex) or hydrophilic (naked or non-enveloped viruses such as poliovirus).

The active ingredient of the AEM 5700/5772 Antimicrobial has been tested in solution and on treated surfaces against a small range of viruses. Following are summaries of this work:

HERPES SIMPLEX

A series of tests were run at Hill Top Research, Cincinnati, Ohio using a 1% solution of AEM 5700. The test method used was designed for disinfectant products used on an inanimate environmental surface for compliance with US EPA Pesticide Assessment Guidelines, Subdivision G: Product Performance, November, 1982. Viricidal activity was shown against Herpes simplex type 1, an enveloped virus).

POLIOVIRUS TYPE 2

In a static test run by Southern Research Institute, Birmingham, Alabama surfaces treated with the active ingredient of AEM 5700 showed viricidal activity against Poliovirus type 1 (Strain MEF-1) (a non-enveloped RNA enterovirus).

BACTERIOPHAGE T2 & HERPES SIMPLEX TYPE 1

In a series of experiments and papers I-Fu (Eric) Tsao and Henry Y. Wang of the University of Michigan, Ann Arbor, Michigan tested the antiviral activity of AEM 5700 treated alginate beads in a flow through filtration system. Antiviral activity against bacteriophage T2 and herpes simplex virus type 1 (HSV-1) (an enveloped animal virus) was shown both in the presence and absence of proteins in the test solutions.

STANDARD QUATS

Numerous papers have been written on the antiviral activity of standard quaternary ammonium compounds both in solution and when immobilized on inert supports. These papers show inactivation of lipid-containing viruses, some non-lipid viruses, and bacteriophages. No antiviral activity was shown for smaller non-lipid viruses such as piconaviruses.

CONCLUSIONS

AEM 5700 solutions and AEM 5700 treated surfaces show positive antiviral activity against a range of viral types. These results are encouraging regarding the utility of this treatment at reducing doses of viruses in a variety of applications.

Interest in the potential activity of the AEM 5700 solution on treated surfaces against specific viruses must be pursued with specific tests.

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The ÆGIS Microbe Shield® Program is based on a unique antimicrobial technology which effectively controls bacteria, fungi, algae and yeasts on a wide variety of treated articles and substrates. The antimicrobial active is registered with the U.S. Environmental Protection Agency and comparable regulatory bodies around the world. The antimicrobial has been used safely and effectively for more than thirty years. This sheet has been prepared in response to numerous requests for a list of microorganisms against which the technology is effective. The list shows specific organisms which have been tested against the technology. They were selected to provide a test spectrum which is representative of all significant types and varieties of microorganisms. The data provided is solely to assist in understanding the capabilities of the technology and should not be considered a warranty. Laboratory testing is performed in a controlled environment and may or may not be representative of real world conditions. Effectiveness against an organism should not be interpreted as eliminating, controlling, minimizing or otherwise affecting health conditions which may be associated with specific organisms.

INTERPRETIVE NOTE:

Although a list of microorganisms against which a biocide has been shown to be effective is important for determining whether or not it may be used against specific types of organisms, it is only the starting point. Killing or controlling microorganisms (particularly in laboratory tests of the active ingredient) is relatively easy. Safety to man and the environment, cost effective use in real world situations, avoidance of the creation of resistant organisms, long term efficacy, potential damage to treated surfaces, and many other factors are normally much more important. Finally, the use of biocides is strictly regulated in the United States. Biocides must be used in strict accordance with Environmental Protection Agency (EPA) accepted handling and use instructions and only for those end uses included in EPA accepted labeling. Misuse of a biocide may be dangerous. It is also illegal.

BACTERIA

Micrococcus sp.
Mycobacterium smegmatis
Staphylococcus epidermidis1
Mycobacterium tuberculosis
Enterobacter agglomerans1
Brucella cania
Acinetobacter calcoaceticus1
Brucella abortus
Staphylococcus aureus (pigmented)1
Brucella suis
Staphylococcus aureus (non-pigmented)1
Streptococcus mutans
Klebsiella pneumoniae ATCC 4352
Bacillus subtilis
Pseudomonas aeruginosa
Bacillus cereus
Pseudomonas aeruginosa1
Clostridium perfringens
Clostridium difficile
Pseudomonas aeruginosa PDR-10
Haemophilus influenzae
Streptococcus faecalis
Haemophilus suis
Escherichia coli ATCC 23266
Lactobacillus casei
Escherichia coli1
Leuconostoc lactis
Listeria monocytogenes
Citrobacter diversus1
Proteus mirabilis
Proteus mirabillis1
Propionibacterium acnes
Proteus vulgaris
Salmonella typhosa
Pseudomonas cepacia
Salmonella choleraesuis
Pseudomonas fluorescens
Corynebacterium Boris
Vancomycin Resistant enterococci
Xanthomonas campestres
Methicillin Resistant Staphylococcus aureus

FUNGI

Aspergillus niger
Mucor sp.
Aspergillus fumigatus
Tricophyton mentagrophytes
Aspergillus versicolor
Tricophyton interdigitalie
Aspergillus flavus
Trichoderma flavus
Aspergillus terreus
Chaetomium globusum
Penicillium chrysogenum
Rhizopus nigricans
Penicillium albicans
Cladosporium herbarum
Penicillium citrinum
Aureobasidium pullulans
Penicillium elegans\
Fusarium nigrum
Penicillium funiculosum
Fusarium solani
Penicillium humicola
Gliocladium roseum
Penicillium notatum
Oospora lactis
Penicillium variabile
Stachybotrys atra

ALGAE

Oscillatoria borneti LB143
Schenedesmus quadricauda
Anabaena cylindrica B-1446-1C
Gonium sp. LB 9c
Selenastrum gracile B-325
Volvox sp. LB 9
Pleurococcus sp. LB11
Chlorella vulgarus

YEAST

Saccharomyces cerevisiae
Candida albicans

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Alta™ and BioAM™ Antimicrobial. Exceptional Protection for Exceptional Environments.

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Alta™ with BioAM™ is an exciting new addition to the Alta family, providing the high performance spill and stain resistance with a non-leaching antimicrobial that controls microorganisms that cause odors and stain and it slows the degradation of products.

FEATURES	BENEFITS
Spill/Stain Prevention	• Repels liquids and helps prevent staining of fabric from dirt and spills, including, blood, urine, body oils, ink, and iodine • Easily cleaned with all detergents, solvents, or 15% diluted bleach (fabric appropriate) • Reduces odors and stains caused by microbes
Protection against Microbes	• Effective against virtually all problem microbes including bacteria, fungi and algae • Durable for the life of the fabric
Durability	• Has been proven durable on fabrics for up to 100 healthcare washings • Durable for the life of the fabric
Passes NFPA 701	• Inherently fire resistant fabrics, which pass NPFA 701 prior to treatment will pass NFPA 701 after the application of Alta with BioAM
Applications	• For healthcare, hospitality, cruise lines, educational, corporate, entertainment, and residential interiors • Excellent for cubical, curtains/drapery/sheers, seating, panel fabrics, and wallcoverings
Environmentally Friendly	• Alta with BioAM is an environmentally friendly chemistry that is recyclable • Contains no arsenic, tin, heavy metals, silver, or polychlorinated Phenols, formaldehyde, + PFOA • Non-leaching technology does not migrate or rub off • Disables microbes through electronic charge • EPA Approved
Alta Healthcare / Food + Beverage + bioAM antimicrobial	• All the benefits of Alta + BioAm plus the liquid barrier protection of Durablock • Meets ASTM F1671 for resistance to penetration by blood borne pathogens (virus and bacteria) • Blocks the passage of dust mites and microscopic allergenic matter