



03-24-2020

Clearstream technologies, LLC

Statement regarding COVID-19 and other enveloped viruses

EPA recognizes Clearstream technologies, LLC's Sabretech QS product, alternate name brands of Penetrex and Biotrex (same EPA Registration as Sabretech QS), and (affiliate partners product) MicroShield 360 as a registered "antimicrobial." CLEARSTREAM TECHNOLOGIES LLC MAKES NO CLAIMS, STATEMENTS OR WARRANTIES REGARDING ANY SPECIFIC PATHOGENS, VIRUSES, OR BACTERIA BEYOND CLEARSTREAM TECHNOLOGIES, LLC'S EPA REGISTRATION. This statement simply is to provide information regarding testing of these products and the status of studies regarding the products.

EPA defines "antimicrobial" as: "destroying or inhibiting the growth of microorganisms and especially pathogenic microorganisms." In 2006, testing was completed (by Hill Top Research, Cincinnati, Ohio, unaffiliated with Clearstream technologies, LLC) on the active ingredient used in Clearstream technologies, LLC's products listed above. This active ingredient is known as 3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE. The results of this testing showed efficacy against herpes simplex type 1 as shown below:

A Review: Antiviral Agent Testing Results

3-(Trimethoxysilyl) Propyldimethyl | Octadecyl Ammonium Chloride Technology

(The active ingredient in Sabretech QS, Biotrex, and Penetrex)

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 proteinaceous capsid, and the RNA or DNA genetic material. These structures and their chemical makeup 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 3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE TECHNOLOGY/ 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 3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE TECHNOLOGY. 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 3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE TECHNOLOGY 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 3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE TECHNOLOGY 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 picornaviruses.

Conclusions

3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE TECHNOLOGY solutions and 3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE TECHNOLOGY 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 3-(TRIMETHOXSILYL) PROPYLDIMETHYL OCTADECYL AMMONIUM CHLORIDE TECHNOLOGY solution on treated surfaces against specific viruses must be pursued with specific tests.

Provided to Clearstream technologies LLC through the public domain published studies



Herpes simplex type 1 is a pathogenic microorganism, and is further classified as “Enveloped Virus in the Phylum of Incertae sedis”, as is COVID-19.

Recently, Clearstream technologies, LLC, through its sub-registered affiliate partner, pursued efficacy testing with Ohio State University of the above products when cured on surfaces against COVID-19. The following is correspondence Clearstream received from Ohio State University referencing the University’s preliminary results.

From: "Pascall, Melvin" <pascall.1@osu.edu>
Date: February 27, 2020 at 3:06:45 PM EST
To: Steve Kubec
Subject: FW: An update on the antiviral test

1. Days 1 and 2 samples were not good because we did not see the plaques in the control plate. It is likely that there were something wrong with the plaque assay.
2. Days 3, 4, 5 samples: control plates has about 4-5 log virus, but the samples from the coated plates had no or 1 log virus. So, the drug/compound worked well for pig coronavirus.

Samples at days 3, 4 and 5 indicated a range of 4-5 log of virus on the surfaces of the untreated plates. This equates to approximately 10,000 to 100,000 viruses on the surfaces of the untreated plates. During the same time period (days 3, 4 and 5), samples indicated a range of no particles-1 log on the surfaces of the treated plates. This equates to approximately 0 to 10 viruses. These tests indicate preliminarily a 99.99% to 99.999% reduction of viral particles on the treated surface.

Although we are encouraged by these results, the results are preliminary. Clearstream technologies, LLC will continue to pursue more definitive results through Ohio State University and other accredited testing laboratories. CLEARSTREAM TECHNOLOGIES LLC MAKES NO CLAIMS, STATEMENTS OR WARRANTIES REGARDING ANY SPECIFIC PATHOGENS, VIRUSES, OR BACTERIA BEYOND CLEARSTREAM TECHNOLOGIES, LLC’S EPA REGISTRATION. This statement simply is to provide information regarding testing of these products and the status of studies regarding the products.

Anthony L Daddona

A handwritten signature in black ink, appearing to read "AD", with a long, sweeping horizontal line extending to the right.

Chief Operating Officer