



# Certifications!

Soaptronic, LLC 20562 Crescent Bay Drive Lake Forest, Ca. 92630 Orders: (800) 327-2606 OFF: (949) 465-8955 FAX: (949) 465-8962 HILL TOP RESEARCH, INC.

# REPORT FOR

# ASSESSMENT OF RAPID GERMICIDAL (TIME KILL) ACTIVITY FOR ANTIBACTERIAL HAND SANITIZERS

For:

Soaptronic® DEGERM

HTR Ref. No.: 99-103694-11

August 11, 1999

FOR

SOAPTRONIC, LLC 20431 James Bay Circle Lake Forest, CA 92630

BY

HILL TOP RESEARCH, INC. Main & Mill Streets Miamiville, OH 45147 Project No. 99-103694-11 Soaptronic, LLC

# 7.0 PROTOCOL

The study protocol was followed as described in Appendix IV.

#### 8.0 RESULTS

The Summary Table of Results is presented in Appendix I and the Tables of Results are presented in Appendix II.

#### 9.0 CONCLUSION

One test article, identified as Soaptronic® DEGERM was tested for cidal effectiveness undiluted, with exposure times of 15 and 30 seconds, at  $25 \pm 1^{\circ}$ C, against the microorganisms outlined below:

Candida albicans, ATCC 10231 Enterococcus faecium (Streptococcus faecalis), ATCC 6057 Klebsiella pneumoniae, ATCC 4352 Proteus mirabilis, ATCC 14153 Pseudomonas aeruginosa, ATCC 15442 Salmonella typhimurium, ATCC 13311

A 99.9 percent or greater reduction  $(3 \log_{10})$  in numbers of all test bacteria was shown after 15 seconds of exposure.

10.0 SIGNATURE

#### HILL TOP RESEARCH, INC.

Date

/Kathleen A. Baxter, B.S. I Study Director Microbiological Services Division

> August 10, 1999 Page 6 of 39

# SUMMARY TABLE OF RESULTS - LOG<sub>10</sub> REDUCTION

Test Organism	Exposure Time	Average Count (CFU/mL sample)	Percent Reduction	Log <sub>10</sub> Reduction
Candida albicans, ATCC 10231	15 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>5.08
	30 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>5.11
Enterococcus faecium	15 sec.	3.5 x 10 <sup>4</sup>	99.927	3.14
(Streptococcus faecalis), ATC <sup>~</sup> 6057	30 sec.	3.8 x 10 <sup>2</sup>	>99.999	5.13
Klebsiella pneumoniae,	15 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>7.23
ATCC 4352	30 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>7.11
Proteus mirabilis,	15 sec.	<2.5 x 10 <sup>3</sup>	>99.991	>4.05
ATCC 14153	30 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>6.43
D 1	15 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>7.00
ATCC 15442	30 sec.	<7.0 x 10 <sup>3</sup>	>99.994	>4.23
	30 sec.*	<1.7 x 10 <sup>1</sup>	>99.999	>6.77
Salmonella typhimurium,	15 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>7.26
ATCC 13311	30 sec.	<1.0 x 10 <sup>1</sup>	>99.999	>7.28

# For Soaptronic® DEGERM at 15 and 30 seconds exposure at $25 \pm 1^{\circ}C$

\*Repeat trial

NR = No Reduction

# TABLE II OF RESULTS NEUTRALIZER/TOXICITY RESULTS

# Neutralizer Effectiveness – Soaptronic® DEGERM Test Date: June 24, 1999

Test Organism: Staphylococcus aureus, ATCC 6538

Dilution	10-1	(jar)	10	).5	10	0-3	1	0-4	10	)-5	10	0-0	CFU/mL
TA + neut (0)*	TNTC*	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>30<sup>6</sup></u>	<u>25</u>	2.8 x 10 <sup>7</sup>
TA + neut (20)	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>25</u>	<u>26</u>	2.6 x 10 <sup>7</sup>
TA + PB H <sub>2</sub> O (0)	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>32</u>	<u>33</u>	3.2 x 10 <sup>7</sup>
TA + PB H <sub>2</sub> O (20)	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>31</u>	<u>29</u>	3.0 x 10 <sup>7</sup>

Neutralizer Toxicity

Test Date: June 24, 1999

Test Organism: Staphylococcus aureus, ATCC 6538

Dilution	10 <sup>-1</sup> (	(jar)	10	)-2	10	)-3	1	0-4	10	)-5	1(	)-6	CFU/mL
Neutralizer (0)	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>275</u>	<u>269</u>	<u>23</u>	<u>30</u>	2.7 x 10 <sup>7</sup>
Neutralizer (20)	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>31</u>	<u>26</u>	2.8 x 10 <sup>7</sup>
PB H <sub>2</sub> O (0)	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>35</u>	<u>26</u>	3.0 x 10 <sup>7</sup>
PB H <sub>2</sub> O (20)	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	TNTC	<u>37</u>	<u>44</u>	4.0 x 10'

<sup>a</sup> TNTC = Too Numerous to Count

<sup>b</sup> Underlined values used in calculations

\* = minutes

HILL TOP RESEARCH, INC.

# **REPORT FOR**

# MODIFIED AOAC CHLORINE (AVAILABLE) IN DISINFECTANTS GERMICIDAL EQUIVALENT CONCENTRATION METHOD (USDA Hand Sanitizer) REPORT

For:

Soaptronic®-DEGERM

HTR Ref. No.: 99-103693-11

July 28, 1999

FOR

SOAPTRONIC, LLC 20431 James Bay Circle Lake Forest, CA 92630

B¥

HILL TOP RESEARCH, INC. Main & Mill Streets Miamiville, OH 45147 Project No. 99-103693-11 Soaptronic, LLC

## 7.0 PROTOCOL

The study protocol, as described in Appendix IV, was followed.

#### 8.0 RESULTS

The Summary Table of Results is presented in Appendix I and the Tables of Results are presented in Appendix II.

#### 9.0 CONCLUSION

The test article, identified as Soaptronic®-DEGERM when tested undiluted by the USDA Food Safety and Inspection Services modification to the AOAC Chlorine (Available) in Disinfectants Germicidal Equivalent Concentration Method against the test organisms, *Salmonella typhi*, ATCC 6539 and *Staphylococcus aureus*, ATCC 6538 was found to be more than equivalent to 50 ppm available chlorine from sodium hypochlorite against both test organisms.

#### 10.0 SIGNATURE

HILL TOP RESEARCH, INC.

Date

Kathleen A. Baxter, B.S. Study Director Microbiological Services Division

July 28, 1999 Page 6 of 30 Report

# Evaluation of GermEx for the inactivation of feline calicivirus, a Norovirus surrogate

#### AUTHORS

Sagar M. Goyal, DVM, PhD Yashpal Malik, DVM, PhD

#### STUDY COMPLETED ON

February 11, 2003

#### PERFORMING LABORATORY

Department of Veterinary Diagnostic Medicine College of Veterinary Medicine University of Minnesota 1333 Gortner Avenue St. Paul, MN 55108, USA

#### **SPONSOR**

Soaptronic LLC 20431 James Bay Circle Lake Forest, CA 92630

## **Objectives:**

To determine the efficacy of GermEx, an instant hand sanitizer, in inactivating feline calicivirus, a surrogate for noroviruses

#### Material provided:

Received two 59-mL bottles of GermEx (Lot No. unknown) from Soaptronic. The active ingredient is 70% isopropanol (w/w) with water, emollient complex, and fragrance.

#### Tests conducted by:

Sagar M. Goyal, DVM, PhD Yashpal Malik, DVM, PhD

#### **Contact Information:**

Sagar M. Goyal, Professor, Department of Veterinary Diagnostic Medicine College of Veterinary Medicine, University of Minnesota, 1333 Gortner Ave nue St. Paul, MN 55108, USA. Phone: 612-625-2714; Fax: 612-624-8707; Email: goyal001@umn.edu

#### **CONCLUSION:**

Under *in vitro* conditions, 1X concentration of GermEx was able to inactivate an average of 99.404%, 99.646%, and 99.885% of feline calicivirus applied to stainless steel surfaces with contact periods of 1 minute, 3 minutes, and 10 minutes, respectively.

# Evaluation of GermEx for inactivation of feline calicivirus, a Norovirus surrogate

**Purpose:** The purpose of this study was to determine if undiluted GermEx was capable of inactivating feline calicivirus applied to stainless steel surfaces.

## **Procedure:**

- 1. Sterilized stainless steel discs were placed in sterile 24-well tissue culture plates.
- 2. On each disc, 20µL of FCV was placed separately and allowed to dry for 30 min.
- 3. 1X concentrations of GermEX in 20µL amounts was placed on discs with FCV.
- Negative controls were maintained in which 20µL of phosphate buffered saline was used instead of GermEx. The amounts of virus eluted in these wells was taken as the amount of initial virus.
- 5. Virus from control and treated discs was eluted after contact times of one, three, and ten minutes by adding 0.9 mL of 3% beef extract (pH 8.5) in each well. The beef extract solution was allowed to contact the disc for 40 minutes at room temperature in a biosafety cabinet. The solution was then vigorously pipetted to release any remaining virus from the disc.
- 6. Serial 10-fold dilutions of all eluates were made immediately in maintenance medium without serum and dilutions inoculated in CRFK cells in triplicate. The plates were incubated at 37<sup>0</sup>C for 48 hours, examined for cytopathic effects, and virus titers calculated by the Reed and Muench (1938) method. Percent inactivation was calculated using differences in virus titers in control and treated wells.
- 7. Five separate experiments were conducted and the results are given in Table 1.

**Conclusions:** Under *in vitro* conditions, 1X concentration of GermEx was able to inactivate an average of 99.404%, 99.646%, and 99.885% of feline calicivirus applied to stainless steel surfaces with contact periods of 1 minute, 3 minutes, and 10 minutes, respectively.

Experiment	Initial virus	Virus titer	after indicat	ed time of	Per cent inactivation			
No.	titer		treatment					
		1 min	3 min	10 min	1 min	3 min	10 min	
1	$7.2 \times 10^4$	$1.7 \ge 10^2$	$1.7 \times 10^2$	NT	99.75	99.75	ND <sup>a</sup>	
2	$7.2 \times 10^4$	$5.5 \times 10^2$	$5.5 \times 10^2$	5.5 x 10 <sup>1</sup>	99.23	99.23	99.92	
3	$7.2 \times 10^4$	$5.5 \times 10^2$	$1.7 \times 10^2$	$3.0 \times 10^{1}$	99.23	99.75	99.95	
4	$7.2 \times 10^4$	$3.0 \ge 10^2$	$1.7 \times 10^2$	$1.7 \times 10^2$	99.58	99.75	99.75	
5	$7.2 \times 10^4$	$5.5 \times 10^2$	$1.7 \text{ x} 10^2$	$5.5 \times 10^2$	99.23	99.75	99.92	
Average	$7.2 \times 10^4$	$4.2 \times 10^2$	$2.\overline{4 \times 10^2}$	$0.\overline{7 \times 10^2}$	99.404	99.646	99.885	

Table 1. Inactivation of feline calicivirus by 1X concentration of GermEx

<sup>a</sup> ND=not done

# Report

# Evaluation of GermEx(Germstar) for the inactivation of transmissible gastroenteritis virus, a surrogate of SARS (severe acute respiratory syndrome) virus

#### **AUTHORS**

Sagar M. Goyal, DVM, PhD Yashpal Malik, DVM, PhD

#### STUDY COMPLETED ON

June 24, 2003

#### PERFORMING LABORATORY

Department of Veterinary Diagnostic Medicine College of Veterinary Medicine University of Minnesota 1333 Gortner Avenue St. Paul, MN 55108, USA

#### **SPONSOR**

Soaptronic LLC 20431 James Bay Circle Lake Forest, CA 92630

#### **Objectives:**

To determine the efficacy of GermEx(Germstar), an instant hand sanitizer, in inactivating transmissible gastroenteritis virus, a coronavirus of pigs. This virus was used as a surrogate of SARS (severe acute respiratory syndrome) virus.

#### Material provided:

Received one 8-oz. bottle of GermEx(Germstar) (Lot No. unknown) from Soaptronic. The active ingredient is 70% isopropanol (w/w) with water, emollient complex, and fragrance.

#### **Tests conducted by:**

Sagar M. Goyal, DVM, PhD Yashpal Malik, DVM, PhD

#### **Contact Information:**

Sagar M. Goyal, Professor, Department of Veterinary Diagnostic Medicine College of Veterinary Medicine, University of Minnesota, 1333 Gortner Avenue St. Paul, MN 55108, USA. Phone: 612-625-2714; Fax: 612-624-8707; Email: goyal001@umn.edu

#### **CONCLUSION:**

Under *in vitro* conditions, 1X concentration of GermEx(Germstar) was able to inactivate an average of 99.709%, 99.9984%, and 100% of transmissible gastroenteritis virus applied to stainless steel surfaces with contact periods of 1 minute, 3 minutes, and 10 minutes, respectively.

#### Evaluation of GermEx(Germstar) for the inactivation of transmissible gastroenteritis virus, a surrogate of SARS (severe acute respiratory syndrome) virus

**Purpose:** The purpose of this study was to determine if undiluted GermEx(Germstar) was capable of inactivating transmissible gastroenteritis virus (TGEV; a coronavirus of pigs used as a surrogate for SARS virus) applied to stainless steel surfaces.

# **Procedure:**

- 1. Sterilized stainless steel discs (approximately 1 cm in diameter) were placed in sterile 24well tissue culture plates.
- 2. On each disc, 20 µL of TGEV was placed separately and allowed to dry for 30 min.
- 3. 1X concentration of GermEx(Germstar) in 20  $\mu$ L amounts was placed on discs with TGEV.
- 4. Negative controls were maintained in which 20 μL of phosphate buffered saline was used instead of GermEx(Germstar). The amount of virus eluted in these wells was taken as the amount of initial virus.
- 5. Virus from control and treated discs was eluted after contact times of one, three, and ten minutes by adding 0.9 mL of 3% beef extract (pH 8.5) in each well. The beef extract solution was allowed to contact the disc for 30 minutes at room temperature in a bio-safety cabinet. The solution was then vigorously pipeted to release any remaining virus from the disc.
- 6. Serial 10-fold dilutions of all eluates were made immediately in maintenance medium without serum and dilutions from one well were inoculated in ST cells in triplicate. The plates were incubated at 37<sup>o</sup>C for 96 hours, examined for cytopathic effects, and virus titers calculated by the Reed and Muench (1938) method. Percent inactivation was calculated using differences in virus titers in control and treated wells.
- 7. Three separate experiments were conducted and the results are given in Table 1.

# **Conclusions:**

Under *in vitro* conditions, 1X concentration of GermEx(Germstar) was able to inactivate an average of 99.709%, 99.9984%, and 100% of transmissible gastroenteritis virus applied to stainless steel surfaces with contact periods of 1 minute, 3 minutes, and 10 minutes, respectively.

Table 1. Inactivation of transmissible gastroenteritis virus by 1X concentration of Germex(Germstar)

Experiment Number	Virus titers in control	Virus titer after treatment with GermEx(Germstar) for indicated time of:			Per cent vi	rus reduction titer	n in virus
		1 min	3 min	10 min	1 min	3 min	10 min
1.	$3.02 \times 10^5$	5.5 x 10 <sup>0</sup>	$5.5 \times 10^{0}$	0	99.9981	99.9968	100.0
2.	3.02x10 <sup>5</sup>	$1.74 \times 10^3$	0	0	99.42	100.0	100.0
Average					99.709	99.9984	100.0

Report

# Evaluation of GermEx(Germstar) for the inactivation of hepatitis A virus

## **AUTHORS**

Sagar M. Goyal, DVM, PhD Yashpal Malik, DVM, PhD

#### STUDY COMPLETED ON

August 5, 2003

#### PERFORMING LABORATORY

Department of Veterinary Diagnostic Medicine College of Veterinary Medicine University of Minnesota 1333 Gortner Avenue St. Paul, MN 55108, USA

#### **SPONSOR**

Soaptronic LLC 20431 James Bay Circle Lake Forest, CA 92630

## **Objectives:**

To determine the *in vitro* efficacy of GermEx(Germstar) in inactivating hepatitis A virus (HAV).

#### Material provided:

Received two 8-oz. bottles of GermEx(Germstar) from Soaptronic. The active ingredient is 70% isopropanol.

## Tests conducted by:

Sagar M. Goyal, DVM, PhD Yashpal Malik, DVM, PhD

#### **Contact Information:**

Sagar M. Goyal, Professor, Department of Veterinary Diagnostic Medicine College of Veterinary Medicine, University of Minnesota, 1333 Gortner Avenue St. Paul, MN 55108, USA. Phone: 612-625-2714; Fax: 612-624-8707; Email: goyal001@umn.edu

#### **CONCLUSION:**

Under *in vitro* conditions, 1X concentration of GermEx(Germstar) was able to inactivate an average of 90.46%, 90.93%, and 92.52% HAV applied to stainless steel surfaces with contact periods of 1, 3, and 10 minutes, respectively. GermEx(Germstar) appears to be an impressive antiseptic because it killed more than one log<sub>10</sub> of HAV, which is a very hardy virus, within one minute. However, studies should be continued to increase the killing of HAV by 2 or 3 logs.

**Purpose:** The purpose of this study was to determine if undiluted GermEx(Germstar) was capable of inactivating hepatitis A virus (HAV) applied to stainless steel surfaces.

## **Procedure for viruses:**

- 1. Sterilized stainless steel discs (approximately 1 cm in diameter) were placed in sterile 24well tissue culture plates.
- 2. On each disc, 20 µL of the test virus was placed separately and allowed to dry for 30 min.
- 3. 1X concentration of GermEx(Germstar) in 40  $\mu$ L amounts was placed on discs with the virus.
- 4. Negative controls were maintained in which 40 μL of phosphate buffered saline was used instead of GermEx(Germstar). The amount of virus eluted in these wells was taken as the amount of initial virus.
- 5. Virus from control and treated discs was eluted after contact times of one, three, and ten minutes by adding 0.9 mL of 3% beef extract (pH 8.5) in each well. The beef extract solution was allowed to contact the disc for 30 minutes at room temperature in a bio-safety cabinet. The solution was then vigorously pipeted to release any remaining virus from the disc.
- 6. Serial 10-fold dilutions of all eluates were assayed for HAV in FRHK cells using the plaque reduction assay.
- 7. The results are shown in Table 1.

Table 1.	Inactivation	of hepatitis A	A virus bv	· 1X	concentration	of GermEx(	(Germstar)
14010 1.	maourration	or nepatition	1 1140 0 5		eoneent atton	or ourment	(Combian)

Experiment Number	Virus titer (pfu)* without treatment	Virus tit GermEx(	er after treatn Germstar) at time of:	nent with a contact	Per cent virus reduction after contact time of:		
		1 min	3 min	10 min	1 min	3 min	10 min
1.	2.36x10 <sup>4</sup>	$2.6 \times 10^3$	$2.14 \times 10^3$	$2.2 \times 10^3$	88.98	90.93	90.68
2.	2.48x10 <sup>4</sup>	$2.0 \times 10^3$	$2.25 \times 10^3$	$1.4 \times 10^3$	91.94	90.93	94.35
Average					90.46	90.93	92.52

\* pfu = plaque forming units

Report

# Evaluation of GermEx(Germstar) for the inactivation of Escherichia coli

## **AUTHORS**

Sagar M. Goyal, DVM, PhD Yashpal Malik, DVM, PhD

#### STUDY COMPLETED ON

August 11, 2003

#### PERFORMING LABORATORY

Department of Veterinary Diagnostic Medicine College of Veterinary Medicine University of Minnesota 1333 Gortner Avenue St. Paul, MN 55108, USA

#### **SPONSOR**

Soaptronic LLC 20431 James Bay Circle Lake Forest, CA 92630

## **Objectives:**

To determine the in vitro efficacy of GermEx(Germstar) in inactivating Escherichia coli

## Material provided:

Received two 8-oz. bottles of GermEx(Germstar) from Soaptronic. The active ingredient is 70% isopropyl alcohol.

## Tests conducted by:

Sagar M. Goyal, DVM, PhD	Signature	Date
Yashpal Malik, DVM, PhD		

#### **Contact Information:**

Sagar M. Goyal, Professor, Department of Veterinary Diagnostic Medicine College of Veterinary Medicine, University of Minnesota, 1333 Gortner Avenue St. Paul, MN 55108, USA. Phone: 612-625-2714; Fax: 612-624-8707; Email: goyal001@umn.edu

#### **CONCLUSION:**

Under *in vitro* conditions, 1X concentration of GermEx(Germstar) was able to inactivate an average of 99.76, 99.9943, and 99.9999% of *E. coli* applied to stainless steel surfaces with contact times of 1, 3, and 10 minutes, respectively.

## **Procedure:**

- 1. Sterilized stainless steel discs (approximately 1 cm in diameter) were placed in sterile 24 well tissue culture plates.
- 2. On each disc, 20 µL of the *E. coli* was placed and allowed to dry for 30 min.
- 1X concentration of GermEx(Germstar) in 20 μL amounts was placed on discs with the bacteria.
- Negative controls were maintained in which 20 μL of phosphate buffered saline was used instead of GermEx(Germstar). The number of *E. coli* eluted in these wells was taken as the amount of initial bacterial load.
- 5. E. coli from control and treated discs was eluted after contact times of one, three, and ten minutes by adding 0.9 mL of 3% beef extract (pH 8.5) in each well. The beef extract solution was allowed to contact the discs for 30 minutes at room temperature in a bio-safety cabinet. The solution was then vigorously pipeted to release any remaining bacteria on the disc.
- 6. Eluates were titrated for bacterial counts using standard pour plate method. Serial 10-fold dilutions of all eluates were made in 1% tryptic soy broth (TSB) and dilutions from one well were inoculated after mixing with 20 mL of 1% tryptic soy agar in 100 x 15 mm Petri dish. The plates were incubated in inverted position at 37<sup>o</sup>C in incubator, results were recorded as colony forming unit (cfu) per milliliter after 24 hrs incubation. Percent inactivation was calculated using differences in bacterial counts in control and treated wells.
- 7. Three separate experiments were conducted and the results are given in Table 1.

Experiment	t Initial titer of <i>Escherichia coli</i> (cfu) without treatment			Titer of <i>E</i> . with Ge	<i>coli</i> (cfu) afte ermEx(Germs	er treatment star) for:	Per cent bacterial reduction after contact time of:		
	1 min	3 min	10 min	1 min	3 min	10 min	1 min	3 min	10 min
1.	2.0x10 <sup>8</sup>	3.0x10 <sup>8</sup>	3.8x10 <sup>8</sup>	$1.0 \times 10^{6}$	8.0x10 <sup>3</sup>	10x10 <sup>1</sup>	99.50	99.997	99.9999
2.	3.0x10 <sup>8</sup>	2.0x10 <sup>8</sup>	2.4x10 <sup>8</sup>	1.2x10 <sup>5</sup>	2.0x10 <sup>4</sup>	0	99.96	99.99	100.0
3.	6.9x10 <sup>8</sup>	$4.0 \times 10^8$	$7.0 \times 10^7$	1.1x10 <sup>6</sup>	1.3x10 <sup>4</sup>	$4.0 \times 10^{1}$	99.84	99.996	99.9999
Average							99.76	99.9943	99.9999

Table 1. Inactivation of *Escherichia coli* by 1X concentration of GermEx(Germstar)

English translation of the original findings and evaluation of soaptronic-DEGERM by Professor Dr. M. Rotter of the Institute for Hygiene and Microbiology of the University of Vienna, Austria.

# Regarding: Your product soaptronic-DEGERM Qualification for surgical disinfection of hands

# CERTIFICATE

Upon your request the above mentioned product was evaluated for its suitability for the surgical disinfection of hands.

Soaptronic-DEGERM is a clear, opalescent, alcoholic liquid with a pH value of 6.04. According to your instructions, it contains 80g% Isopropanol alcohol and 0.05% refatting agent.

#### 1. Experimental Setup

#### 1.1. Pilot Tests:

These tests are already described in our report R 44/92 of October 8th, 1992 and their results have been reproduced.

#### 1.2. Tests simulating practical conditions:

The examination was conducted according to guidelines from the Austrian Association for Hygiene, Microbiology, and Preventive Medicine ("ÖGHMP"). These guidelines were established on November 4th, 1980 in order to test the efficacy of disinfectants for surgical disinfection of hands.

#### 2. Results

The results obtained from the counting plates are listed in tables 1 and 2. Values used for further computation are marked with an asterisk. The logtransformed pre-and post treatment values as well

as the log reduction factors for immediate and long-term effects for each volunteer are listed in tables 3 (reference) and 4 (soaptronic DEGERM). The following mean reduction factors (SD) were calculated:

	Immediate	Long-term
Reference	2.6	1.31
soaptronic-DEGERM	2.77	1.78

The mean logRF's obtained for soaptronic-DEGERM were higher than the reference.

#### 3. Assessment

Soaptronic-DEGERM proved during application "product repeatedly applied in 3ml-portions, rubbed in while keeping hands moist with alcohol for 5 min" to be suited for surgical disinfection of hands.

Signed by: Prof. Dr. W. Koller, Prof. Dr. M. Rotter, Dr. M.Breuer.

# Surgical disinfection of hands List of analyzed data and reduction method

## Preparation: soaptronic-DEGERM

•	Vo- lun- teer	Immidiate lgPrV	effect lgPoV	lgRF	Long-term lgPrV	lgPoV	lgRF
	1	4.09	2.04	2.05	4.08	2.32	1.76
	2	4.62	0.90	3.72	4.99	2.65	2.34
	3	4.81	1.76	3.05	4.29	2.86	1.43
	4	4.43	2.57	1.86	3.94	3.90	0.04
	5	4.65	0.48	4.17	4.10	1.49	2.61
	6	5.17	1.59	3.58	5.34	2.32	3.02
	7	4.46	2.45	2.01	4.47	2.17	2.30
	8	2.59	0.48	2.11	3.79	3.00	0.79
	9	4.48	2.19	2.29	3.79	2.89	0.90
	10	4.99	1.95	3.04	5.25	2.84	2.41
	11	4.43	0.90	3.53	4.17	1.79	2.38
	12	4.35	3.42	0.93	5.03	4.25	0.78
	13	4.47	2.99	1.48	3.99	2.17	1.82
	14	4.03	1.76	2.27	4.86	3.16	1.70
	15	3.80	0.00	3.80	3.92	2.00	1.92
	16	5.11	2.01	3.10	3.92	0.00	3.92
	17	4.98	0.00	4.98	4.72	3.94	0.78
	18	4.80	1.91	2.89	4.49	2.39	2.10
	19	4.55	2.72	1.83	4.40	3.62	0.78
	xs	4.460.58	1.69	2.77	4.40	2.62	1.78





touchless sanitation system

soaptronic. LLC

26834 Vista Terrace Lake Forest, CA 92630 Toll Free (800) 327-2606 Phone (949) 465-8955 (949) 465-8962 Fax





touchless sanitation system

# Summary

# Germstor. an Alcohol-Based Handrub:

# Benefits Gormstar. provides!

- **Requires less time**
- More effective for standard hand washing, than soap
- More accessible than sinks
- Reduces bacterial counts immediately on contact with hands
- Improves skin condition

In summary, *Germst* provides several advantages compared to hand washing with soap and water, because it not only requires less time, Germstring also acts faster. In addition, *Comstar* is 100 times more effective than a standard hand washing with soap and water, the Germcontrol touchless dispenser is more accessible than sinks, and the active ingredient of 70% isopropyl alcohol is deemed the most efficacious alcohol agent for reducing the number of bacteria or viral germs on the hands, and *Germstar* will aide in improving skin condition.

