Quick-Med Technologies, Inc.

NimbuDerm™ Persistent Skin Sanitizer

Overview

August, 2011

NimbuDerm™

Extraordinary protection between regular hand-washing for continuously germ-free hands

Safe | Effective | Instant | Extremely Long-Lasting

Notice: This document describes a prototype product and is not intended to make or imply public health claims.

Two Key Questions

Why use a hand sanitizer?

- Because bacterial contamination is present on many familiar surfaces (including phones, desktops, keyboards, door knobs, faucet handles, shopping carts, etc.)
- Because most pathogens in the home, at work, and in the hospital that lead to infection or illness are spread through hand contact

Why use a persistent hand sanitizer?

- Because today's sanitizers don't provide any ongoing or residual protection
- Because surfaces are dirty and it's simply not practical to wash or sanitize hands after each hand contact
- Because we frequently touch our face, our mouth or our eyes (sometimes even without being conscious of the action)

Why is Persistence Important?

Because many surfaces and other people's hands aren't always as clean as they should be …

- Harmful bacteria and viruses can live on surfaces in excess of 72+ hours
- Even familiar surfaces are often highly contaminated
  - Phones, desktops, keyboards & mice, door knobs, shopping carts, dashboards
- Travelers routinely encounter unfamiliar surfaces that aren't receiving adequate sanitization
- Officer workers touch as many as 30 surfaces per hour
- 72% of day care surfaces test positive for influenza A (April – seasonal high)
- Children touch their face, mouth, or nose once every 3 minutes
- Even hospitals are not hitting their hand-hygiene targets (despite vigorous training)
- 80% of all pathogens in the hospital and in the home are spread through hand contact

… and it's not practical to wash or sanitize hands after each hand contact

Opportunity *Fulfilling a Critical Market Need*

Problem	• Hand contact with contaminated surfaces has been established as the primary way that individuals catch germs • A majority of people simply do not wash their hands properly or as frequently as they should for good health • This situation occurs not only among the general public but also with trained healthcare workers • Hand sanitizers provide a brief reduction in germ counts on skin, but contact with surfaces returns germs to the skin • Contaminated surfaces are everywhere, even in hospitals where studies have found ~75% of all patient rooms have surfaces contaminated with MRSA • Problematic bacteria and viruses can survive on surfaces for multiple days
Solution	• NimbuDerm™ delivers a breakthrough in hand-hygiene technology—safe, effective, instant, and extraordinarily long-lasting antimicrobial protection • Reducing bacteria on hands and preventing infections before they develop contributes to good health, minimizes cost and risk, and saves lives

What is NimbuDerm™ ?

- A highly effective skin sanitizer
- An instantly effective, durable skin cleanser with eight-hour persistence
- A breathable film barrier that comfortably adheres to skin
- A safe, convenient, low cost skin sanitizer that resists removal by water, but is easily removed with soap and water
- A unique, cost effective product that addresses the needs of today's active lifestyles

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NimbuDerm™—A Unique Skin Disinfectant

- NimbuDerm™ has broad spectrum efficacy.
- It kills bacteria, fungi and viruses *instantly.*
- It continues to function at a high level of efficacy for eight hours.
- It is easily applied and dries quickly.
- It can only be removed with a soap and water wash.
- The chemical formulation is unique and is based on a proprietary new form of a commonly known film-former.
- NimbuDerm™ is highly cost effective.
- Two patents are pending.

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Broad Spectrum Efficacy

NimbuDerm™ effectiveness as tested on pigskin*

Bacteria	ATCC#	% Kill
Staphylococcus aureus	6538	99.9999%
Escherichia coli	15597	99.9999%
Pseudomonas aeruginosa	15442	99.9999%
Serratia marcescens	13880	99.9999%
MRSA	BAA-44	99.9999%
Vancomycin resistant *Enterococcus*	700221	99.9999%

*Test method: modified AOAC Use-Dilution Test on pigskin carriers at a 4 hour exposure.

This document has been prepared to assist in technology evaluation. Data presented herein were collected using standard laboratory methods and are presented solely to substantiate the efficacy of NimbuDerm technology. Display of data is not intended to be a public health claim.

Works Instantly and for Hours

Cup Scrub Results on Human Subjects Demonstrating Time Persistence

Drying Time of NimbuDerm™ on Human Skin (in hours)	Percent Kill Levels for *Serratia marcescens (ATCC #13880)**
T=0	99.99%
T=4	99.9999%
T=6	99.9999%

*NimbuDerm efficacy was measured immediately after exposure to the test bacteria for each of these three drying times.

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Thin Film Efficacy Test Results

Thin Film Efficacy Test Results vs. a Leading Hand Sanitizer

Sanitizer Product	*Staph. aureus*	*Staph. aureus*	*E. coli*	*E. coli*	*MRSA*	*VRE*
	24 hours	48 Hours	24 Hours	48 Hours	24 Hours	24 Hours
NimbuDerm™	60 Pass	60 pass	60 Pass	60 Pass	60 Pass	60 Pass
Product A	0 Pass	0 Pass	0 Pass	0 Pass	0 Pass	0 Pass

*Coated growth media are inoculated, allowed to dry and incubated overnight. A Pass observation is recorded for plates with zero growth.

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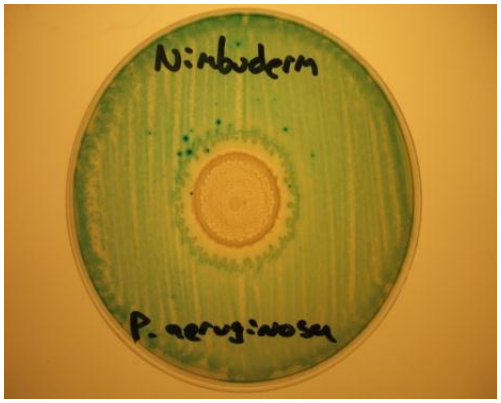
Zone of Inhibition for Various Microbicides Against *Pseudomonas aeruginosa*

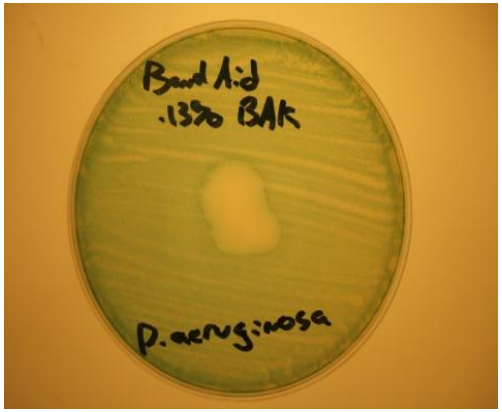
NIMBUDERM showing larger ZOIs than Triclosan, BZK and CHG

NimbuDerm™



Triclosan

Benzalkonium Chloride



Chlorhexidine Gluconate

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Developing Next Generation Technologies and Beyond

NimbuDerm™

Assurance of germ-free hands

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