# IOTEX™
**Anti-Infection Products Inc.**

## An Overview:

### The IOTEX™ NanoBubbler:

The Public Health Agency of Canada reported that 18,000 Canadians contracted drug-resistant infections while in hospital. Approximately, 8500 Canadians die from post-operative infections every year.

There is nothing like the IOTEX™ NanoBubbler presently in use. The IOTEX™ NanoBubbler is the solution to the problem of effectively treating at-risk patients who are suffering from topical and other infections.

The IOTEX™ NanoBubbler is a patented machine that infuses water with a safe, anti-infection ingredient:
- chemistry that is safe for people, deadly for microbes.
- different-sized IOTEX™ NanoBubbler machines can be made depending on need.

IOTEX™ has created a number of topical, anti-infection products from a resin originally used in the Space Shuttle to treat water.

IOTEX™ products, in vitro, kill all tested pathogens, including, methicillin- resistant bacteria (MRSA) and pseudomonas aeruginosa, etc., (please see enclosed laboratory tests).

The IOTEX™ NanoBubbler, uniquely,
- may be used to treat urinary tract infections, particularly in women
- decreases inflammation and therefore decreases pain when treating wounds
- can be used to treat diabetic sores and thereby prevent amputations and/or deaths
- can be used to treat burn victims
- can be used to treat athlete's foot infections
- can be used to ameliorate the symptoms of psoriasis
- can be used to ameliorate the symptoms of eczema
- may be an effective treatment for shingles

The IOTEX™ NanoBubbler can be modified to be used in agriculture:
-to prevent and control the spread of infections between cattle, sheep and pigs
-to treat lower leg infections in horses
-in abbatoirs to dcrease the possibility of contamination
-in aquaculture instead of antibiotics

The IOTEX™ NanoBubbler can be used by veterinarians to treat skin infections and hair problems in dogs and cats.

IOTEX™ products do not damage the environment.

IOTEX™ products have had limited use in vivo; however, in post-earthquake Haiti, for example, they proved to be extremely effective.

IOTEX™ products, depending on the situation, can cost less than a penny per use.

IOTEX™ products, after thirty years in use, have never encountered bio- resistance.
There is a vast market that needs the IOTEX™ NanoBubbler and other IOTEX™ prodcuts, for example:
-there are approximately 6000 medical centers in North America
-there are approximately 6600 veterinarian medical facilities in North America

Retail price for a hospital-sized IOTEX™ NanoBubbler is less than $7 ,500.00. Replacement cost for the active ingredients is $1,000.00 per year, per unit. There will be a 10% discount for clients who return the active ingredient cartridges.
In a hospital setting, depending on the number of patients treated per day, the per patient cost during the first year would be $5 or less, decreasing to $0.50 or less, beginning in the second year.

To treat a chronic wound in Canada presently costs between $10,000 and $17,000 per year.

To close a chronic wound, presently takes approximately 165 days.

The IOTEX™ NanoBubbler and the IOTEX™ Anti-Infection Fabric can dramatically decrease the costs and the treatment times.

Diabetes alone, costs Canada approx. $7 billion per year
-in direct hospital costs
- cardiovascular disease treatment
- G.P. costs
- specialist costs
- medication costs

The IOTEX™ NanoBubbler can have a major impact on 4 of those 5 treatment costs.
More importantly, the IOTEX™ NanoBubbler can decrease up to a 75% of the amputations caused by diabetic infections.

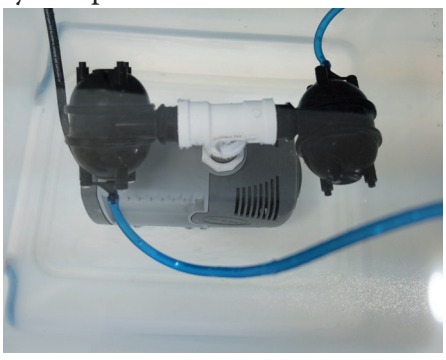
The IOTEX™ Nano-Spray and IOTEX™ Anti-Infection Fabric can be used on small or large cuts, to prevent them from becoming life-threatening conditions.

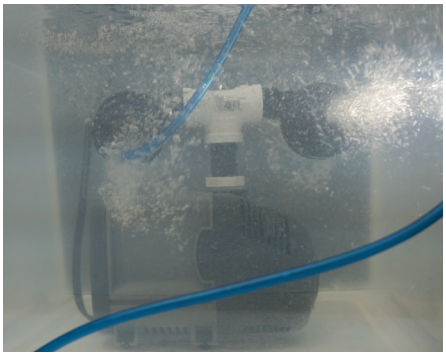
The IOTEX™ Nano-Spray can be used as a hand and face sanitizer to replace triclosan and/or alcohol wipes

According to the World Health Organization, approx. 347,000,000 people worldwide have diabetes, and the numbers are increasing.

Using IOTEX™ products can help reduce the growth of DRI's (drug resistant infections)

U.S. patents on the key components





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**Date:** February 11, 2005

# Analytical Report

## PURPOSE:

**TO PROVE THE EFFICACY OF THE IOTEX BUBBLER IN MAINTAINING LOW BACTERIA COUNTS WITHIN A SELF CONTAINED RESERVOIR**

## Product: Iotex Bubbler™

## Method: Bacterial Water Testing by membrane filter method.

**Test Organisms:**

| | |
|---|---|
| Pseudomonas aeruginosa | ATCC 27853 |
| Enteropathogenic Escherichia coli O127:H7 | ATCC 35150 |

**Material:**

Iotex Bubbler Unit™
CLED Agar
MacConkey Agar
Sterile $H_2O$
Sterile Cylinders
Sterile Pipettes
Sterile Disposable Tubes
Sterile 100 mm Petri dishes
Sterile 80 mL plastic containers
Sterile calibrated inoculating loops
Vortex mixer
Incubator at 35°C
0.5 and 1.0 McFarland Turbidity Standard

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# Test 1.

Three Iotex Bubbler ™ Units were tested for inhibition of $10_3$ to $10_4$ CFU/ml Pseudomonas aeruginosa in water.

### Procedure:

1 Litre of sterile distilled water containing $10_3$ to $10_4$ CFU/ml Pseudomonas aeruginosa was prepared for each unit and was tested by plate colony count to assure accurate inoculum.
500 ml of inoculated water was poured into each Iotex Bubbler ™ and was pressurized using a pump. Timer was used to expose this inoculum in the Iotex Bubbler ™ for a period of 5 minutes. Bacterial growth can also form on the walls and top lids in self contained reservoirs. Therefore each reservoir was shaken and tipped upside down to draw the test sample.
100 ml sample from each unit was dispensed by the unit and were tested for bacterial count.

### Result:

There was 100% inhibition of Pseudomonas aeruginosa at $10_3$ to $10_4$ CFU/ml on all three units. Culture results as “NO GROWTH” proved this after 24 and 48 hours of incubation.

# Test 2.

Three Iotex Bubbler ™ Units were tested for inhibition of $10_3$ to $10_4$ Pseudomonas aeruginosa and $10_3$ to $10_4$ Enteropathogenic Escherichia coli O127: H7 in water.

### Procedure:

1 Litre of sterile distilled water containing a mixed inoculum of $10_3$ to$10_4$ CFU/ml of Pseudomonas aeruginosa and $10_3$ to $10_4$ CFU/ml of Enteropathogenic Escherichia coli O127: H7 was prepared for each units and were tested by plate colony count to assure accurate inoculum.
500 ml of inoculated water was poured into each Iotex Bubbler ™ and was pressurized using a pump. Timer was used to expose this inoculum in the Iotex Bubbler™ for a period of 5 minutes. Bacterial growth also can form on the walls and top lids in self contained reservoirs. Therefore each reservoir was shaken and tipped upside down to draw the test sample.
100 ml sample from each dispensed from each unit and were tested for bacterial count.

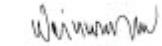
### Result:

There was 100% or complete inhibition of $10_3$ to $10_4$ CFU/ml Pseudomonas aeruginosa and $10_3$ to $10_4$ CFU/ml Enteropathogenic Escherichia coli O127: H7 on all three tested units.
Culture results as “NO GROWTH” proved this after 24 and 48 hours of incubation.

### Summary:

The Iotex Bubbler™ Unit completely inhibited bacterial contamination of $10_3$ to $10_4$ CFU/ml.

### Signature:



Joseph Weinwurm, B.Sc., A.R.T.
Cadentrix Inc.

**Test protocol for the Iotex Bubbler:**
As written by Dr. Philip F. Stuart MD, Phd., F.R.C.P.(C)

The purpose of this testing was to investigate the efficacy of the Iotex Bubbler's ability to maintain or decrease the microbial counts of the water contained within a self contained dental water bottle. The introduction of contaminated air, improper handling of bottle components, or pre-existing high microbial counts can all lead to the introduction of bacteria into the dental unit's waterline. Exposure and sublimation of the air stream with low dose IOTEX chemistry saturating the water with anti-microbial air bubbles and exposing the bottle interior to anti-microbial air should eliminate all three contamination sources.

Several colonies of E.Coli were suspended in 500 ml of de-chlorinated tap water and allowed to equilibrate with stirring to room temperature.

Before each exposure, two vials of water containing the E. Coli suspension were aspirated into sterile IME ampoules and tested to determine starting bacterial counts.

The bacterial suspension was then poured into sterile dental bottles and injected with air containing sublimated anti-microbial vapour from the Iotex Bubbler for two minutes.

Two water samples were taken from the water contained within the bottle at 2 minutes and 16 hours post treatment for bacterial count evaluation as well as chemical residue.

| Test date | Test sample | Pre-treatment | 2 minute post treatment/chemistry p.p.m. | Reduction % | Cfu count 16 hrs post treatment/chemistry p.p.m. |
|---|---|---|---|---|---|
| 7/4/2004 | A | 47,000,000 cfu | 110,000 cfu/.5 | 99.8 | 0 cfu/.3 |
| | B | 47,000,000 cfu | 130,000 cfu/.5 | 99.8 | 0 cfu/.3 |
| | Average | 47,000,000 cfu | 120,000 cfu/.5 | 99.8 | 0 cfu/.3 |
| 7/11/2004 | A | 15,000,000 cfu | 210,000 cfu/.5 | 98.6 | 0 cfu/.3 |
| | B | 15,000,000 cfu | 190,000 cfu/.5 | 98.6 | 0 cfu/.3 |
| | Average | 15,000,000 cfu | 200,000 cfu/.5 | 98.6 | 0 cfu/.3 |
| 8/5/2004 | A | 7,100,000 cfu | 910 cfu/.5 | 99.99 | 0 cfu/.3 |

**Results**:

The data shows that after a 2 minute exposure to the anti-microbial vapour injections there was an average 99.4% reduction in pre-treatment E. Coli counts. After 16 hours no viable bacteria was detected in either sample. Chemical levels were .5 p.p.m. after 2 minutes and .3 p.p.m. after 16 hours.

**Conclusions:**

The Iotex Bubbler's pulse injection of low dose anti-microbial chemistry in air effected an almost **99% bacterial reduction in a suspension exceeding concentrations found in raw sewage.** The residual effect of the pulse injection was an almost complete destruction of the bacterial challenge.

**Test protocol for the Iotex Bubbler:**
As written by Dr. Philip F. Stuart MD, Phd., F.R.C.P.(C)

The purpose of this testing was to investigate the efficacy of the Iotex Bubbler's ability to maintain or decrease the **Pseudomonas Aeruginosa** counts of the water contained within a self contained dental water bottle. Source water microbial counts can all lead to the air stream with low dose IOTEX chemistry, saturationg the water with anti-microbial air bubbles and exposing the bottle interior to anti-microbial air should eliminate all three contamination sources.

A colony of **Pseudomonas Aeruginosa** was suspended in 500 ml of de-chlorinated tap water and allowed to equilibrate with stirring to room temperature. Two sample batches were taken from the initial suspension. One to be used immediately, and one to be refrigerated for 20 hours prior exposure the following day.

Before each exposure, a vial of water containing the **Pseudomonas** suspension was aspirated from the sample into sterile IME ampoules and tested to determine starting bacterial counts. The bacterial suspension was then poured into a sterile dental bottle and injected with air containing sublimated anti-microbial vapor from the Iotex Bubbler for three minutes.

Two water samples were taken from the water contained within the bottle at 3 minutes and 16 hours post treatment for bacterial count evaluation as well as chemical residue.

| Test date | Test sample | Pre-treatment | 3 minute post treatment/chemistry p.p.m. | % Reduced | Cfu count 16 hrs post treatment/chemistry p.p.m. |
|---|---|---|---|---|---|
| 8/7/2004 | Control | 59,000 cfu | | | |
| | Exposed | 59,000 cfu | 800 cfu/.5 | 98.7 | 0 cfu/.3 |
| 8/8/2004 | Control | 18,000 cfu | | | |
| Refrigerated | Exposed | 18,000 cfu | 0 cfu/.5 | 100 | 0 cfu/.3 |

**Results**:

The data shows that after a 3 minute exposure to the anti-microbial vapour injections there was an average 99.4% reduction in pre-treatment **Pseudomonas** counts. After 16 hours no viable bacteria was detected in either sample. Chemical levels were .5 p.p.m. after 3 minutes and .3 p.p.m. after 16 hours.

**Conclusions:**

The IOTEX Bubbler's pulse injection of low dose anti-microbial air effected an almost 99% Pseudomonas reduction.