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## **Impact of an external energy on *Staphylococcus epidermis* [ATCC –13518] in relation to antibiotic susceptibility and biochemical reactions – An experimental study**

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## Abstract

### Purpose

While spiritual and mental energies are known to man, their impact has never been scientifically measurable in the material world and they remain outside the domain of science. The present experiment on *Staphylococcus epidermis* [ATCC –13518], validate the effects of such energy transmitted through a person, Mr. Mahendrakumar Trivedi, which has produced an impact measurable in scientifically rigorous manner.

### Methods

*Staphylococcus epidermis* strains in revived and lyophilized state were subjected to spiritual energy transmitted through thought intervention and/or physical touch of Mr. Trivedi to the sealed tubes containing strain, the process taking about 3 minutes and were analyzed within 10 days after incubation. All tests were performed with the help of automation on the Microscan Walkaway System in Microbiology Laboratory - accredited by The College of American Pathologists.

### Results

The results indicated that Mr. Trivedi's energy has changed 7 of 27 biochemical characteristics of *Staphylococcus epidermis* along with significant changes in susceptibility pattern in 8 of 29 antibiotics. The Biotype number has changed from the original control strain giving rise to 2 different biotypes in treated samples while the external energy /treatment given was the same for all treated samples suggestive of random polymorphism as analyzed through the automated machine.

### Conclusions

These results cannot be explained by current theories of science, and indicate a potency in Mr. Trivedi's energy, providing a model for science to be able to investigate the impact of spiritual energy in a rigorous manner.

In lyophilized state, biochemical and enzymatic characteristics could be altered.

## Introduction

All living organisms contain large complex molecules within the cells. Some of these are proteins and enzymes including DNA / RNA. The nature of the organisms is dependent on the biochemical reactions, which can be characterized and identified.

Antibiotic resistance, regardless of antibiotic and bacteria, will occur with sufficient time and drug use. Widespread antibiotic use causes selection pressure: resistant strains survive while susceptible ones are eliminated. Antibiotic resistance is progressive, increasing from low to intermediate to high levels [1]. Bacterial strains are also characterized by their relative resistances to a range of antibiotics. However, such a change does not take place spontaneously in a strain over a 10-day period of normal incubation without continuous exposure to any drugs.

In this paper we report the impact of spiritual energy on *Staphylococcus epidermis*, in revived and lyophilized state, with respect to its antibiotic susceptibility pattern along with biochemical properties analyzed within a period of 10 days. The said energy was transmitted through thought intervention of an individual, Mr. Mahendrakumar Trivedi who has been interacting with a large number of people as a healer over the last decade. As responses by humans can be accounted for by the placebo effect, these experiments on lower organisms were designed in order to directly test the impact through scientific studies to rule out the placebo effect.

It is widely accepted that lyophilization is the method most commonly used to store and transport microbial cultures as change in the biochemical and enzymatic characteristics of an organism cannot be carried out in this state.

## Material and Methods

Two strains of *Staphylococcus epidermis* [ATCC –13518] were procured from MicroBioLogics in sealed packs bearing the same ATCC number and stored according to the recommended storage protocols until needed for experiments. The study was grouped as per the following.

### Group I:

One of the two sealed packets was handed over to Hinduja Microbiology Lab and was revived by them in two separate tubes, of which one was the control. The control tube was analyzed for identification, antibiotic susceptibility and biochemical reactions as per the standard protocols of sample processing in the microbiology lab.

The second tube, (ATCC ‘A’) having viable bacterial culture, was handed over to Mr. Trivedi for treatment, after sealing by parafilm. It was assessed on the 5<sup>th</sup> and 10<sup>th</sup> days after treatment.

### Treatment:

Mr. Trivedi held this tube in his hand under ambient conditions for between 0.5 to 3

minutes while treating it through his thought intervention process by communicating and instructing the experimental object within the tube in order to undergo the change. The tube was returned to the lab in the sealed condition itself.

## Group II:

The second sealed packet of *Staphylococcus epidermis* [ATCC –13518] (ATCC ‘B’) was treated by Mr. Trivedi directly in the sealed lyophilized state, using the same treatment process as above. The sealed tubes were broken and the strains were revived and analyzed on the 10<sup>th</sup> day for identification, susceptibility testing and biochemical reactions. All tests were performed with the help of automation on the Microscan Walkaway System (Dade Behring Siemens) using PBPC-20 panels. Antimicrobial susceptibility was determined using the Minimum Inhibitory Concentration (MIC) method as per the latest CLSI guidelines.

## MicroScan

After inoculation and rehydration with a standardized suspension of organism and incubation at 35<sup>0</sup>c for 16 hrs, the minimum inhibitory concentration (MIC) or the qualitative susceptibility (susceptible, intermediate or resistant) was determined by observing the lowest antimicrobial concentration showing inhibition of growth. The results of susceptibility testing were expressed in millimeters of growth inhibition with disk testing and in mcg/ml in MIC testing.

## Quality control:

The acceptability of the identification media and antimicrobial agents was checked prior to the study by ATCC control organisms, *S Aureus* ATCC 29213, & E Coli ATCC 25922.

Panel used: PBPC-20

## List of Antibiotics tested:

Amoxicillin / k clavulanic acid, Ampicillin / Sulbactam, Ampicillin, Azithromycin, Cafazolin, Cefepime, Cefotaxime, Ceftriaxone, Cephalothin, Chloramphenicol, Ciprofloxacin, Clindamycin, Erythromycin, Gatifloxacin, Gentamicin, Imipenem, Levofloxacin, Linezolid, Moxifloxacin, Nitrofurantoin, Norfloxacin, Ofloxacin, Oxacillin, Penicillin, Rifampin, Synercid, Tetracycline, Trimethoprim / Sulfa and Vancomycin.

## Following Biochemical tests were performed:

Urea, Lactose, Arginine, Crystal Violet, Novobiocin, Indoxyl Phosphatase, Voges – Proskauer, Nitrate, Pyruvate, Glycosidases, Arabinose, Raffinose, Sorbitol, RBS, PGR, MS, OPT, PHO, BE, PYR, MAN, TRE, MNS, BAC, HEM, INU and NACL

## Setting:

Microbiology Laboratory of P.D. Hinduja National Hospital & Medical Research Centre, Mumbai, India – accredited by The College of American Pathologists

## Results:

In this paper, only the changes / variations in antibiotic susceptibility and biochemical reactions that were observed before the treatment (control) and after the treatment (treated) have been reported in a tabular form attached herewith.

The results of the antibiotic susceptibility tests, identification tests and biochemical tests can be seen in Table 1.

Details of MIC values have been presented in Table 2.

### Antibiotic Susceptibility :

From tables 1 & 2, it can be seen that changes have occurred in both the revived and the lyophilized forms after treatment.

### Group I:

For two of the eight antibiotics shown here, Chloramphenicol and Gentamicin, the MIC values in the control strain have decreased in the treated sample by the 5<sup>th</sup> day, changing the susceptibility from resistant in the control sample to a sensitive strain. And the same sample further again became resistant by the 10<sup>th</sup> day attaining increase in MIC values.

### Group II:

In Group II samples too, although treated directly in the lyophilized form, a change may be noted in the susceptibility to Azithromycin, whose MIC values decreased after treatment from >4 in the control to ≤2 in the treated sample, changing the susceptibility from resistant in the control to sensitive in the treated sample by Day 10.

For five of the eight antibiotics shown here, Ciprofloxacin, Gatifloxacin, Levofloxacin, Ofloxacin and Moxifloxacin, the MIC values in the control strain have increased in the treated sample, changing the susceptibility from sensitive in the control sample to a resistant strain by 10<sup>th</sup> day.

## Organism Identification:

Biotype numbers of particular organisms were arrived at after interpreting the results of the biochemical tests. The Biotype numbers then led to the particular Organism Identification.

Surprisingly, the biotypes have changed in two of three treated samples compared to control and did not match with each other. In Group II sample, which was treated in lyophilized form itself, the species itself has been identified to be different by Day 10.

## Biochemical Reactions :

### Group I:

In Group I, for Raffinose and Arginine, the reaction was positive in the control sample and had changed to negative by 5<sup>th</sup> Day in the treated sample but returned to positive by Day 10. Rest of the biochemical reactions did not show any changes in Group I samples.

### Group II

For seven of the biochemical tests changes may be noted, which was treated directly in the lyophilized form. The reaction with Raffinose, Arginine, Voges – Proskauer, BE, PYR and Urea had changed from a positive result in the control to negative by the time it was tested on the 10<sup>th</sup> day. Arabinose has also changed from negative to positive, although it remained unaffected in treated samples of Group I.

## Discussion:

While misidentifications and errors in assessment of the above characteristics are known to have occurred in such tests, the existence of changes in so many properties and tests cannot be dismissed as a machine error. The findings of alterations in antibiotic susceptibility patterns as well as in several biochemical reactions as a result of the treatment applied are unexpected and unprecedented based on the literature so far, and currently unexplained by science. The biotypes of the organisms have also changed after treatment by Mr. Trivedi. This appears to indicate the presence of an energy to which the organisms were exposed. And most important is that the particular microbe reacted to this energy, which has never been reported yet.

In separate studies, the effect of Mr. Trivedi's energy on bacterial strains of ATCC through DNA fingerprinting has indicated DNA polymorphism ranging from 4% to 79% [2] (un published). Further, 16S rDNA tests show a change in the bacterial species. [3]. Such observations are indicative of alterations in genotype. The similarity

of effect of Mr.Trivedi's unique energy on biochemical changes and susceptibility patterns of *Staphylococcus epidermis* [ATCC –13518] and other bacteria referenced above [2,3] lead us to postulate that *Staphylococcus epidermis* [ATCC –13518] has also gone through a genotype change. Thus we expect to see DNA polymorphism in these strains, which may be responsible to cause such changes in antibiotic susceptibility as well as in biochemical reactions.

The results obtained in the present experiment indicate the existence of an energy that is still not known to contemporary physical and life sciences and which can effectively alter the characteristics of the microorganisms such as the bacteria studied in this work. It is not possible to find an explanation of such observations based on the current scientific knowledge. These results may give rise to better insight into the pathways that lead to mutation and may also help to understand the possible biochemical pathways that take place in the life cycle of the particular microbe.

While science has so far remained unable to enter into questions regarding 'consciousness / Spiritualism' and ordered forces or energies which can interconnect materials on a plane of higher information, the results of the current experiments prove the existence of a direct model for investigation into the impact of a spiritual energy in a rigorous manner.

## Conclusions:

- 1 Mr.Trivedi's energy has altered the biochemical reactions along with the antibiotic susceptibility of *Staphylococcus epidermis* only within the period of 10 days.
2. The changes occurred in seven biochemical reactions in the lyophilized state are impossible as per the present knowledge and would be considered miraculous.
3. Lyophilization is the method most commonly used for the preservation of microorganisms, as it does not alter the Chemical and enzymatic characteristics of the microbes. On contrary, the presented results have observed the changes in few characteristics of *S. epidermis* in the lyophilized state itself indicating the need for superior method for storage of particular microorganism.
4. These results cannot be explained by current theories of science, and indicate a potency in Mr.Trivedi's energy, providing a model for science to be able to investigate the impact of spiritual energy in a rigorous manner.
5. In lyophilized state, biochemical and enzymatic characteristics could be altered.

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Table 1: Analysis of biochemical reactions, Biotype, Organism Identification Name and Antibiotic susceptibility patterns of all samples.

Name of the bacteria & ATCC no.	Antibiotics & Biochemical Reactions	Control	GROUP - I		GROUP -II
			Treated 5 <sup>th</sup> day  ATCC 'A'	Treated 10 <sup>th</sup> day  ATCC 'A'	Lyophilized - Treated Directly, 10 <sup>th</sup> day  ATCC 'B'
<i>S. epidermis</i> ATCC -13518	Azithromycin	R	R	R	S
	Ciprofloxacin	S	S	S	R
	Gatifloxacin	S	S	S	R
	Levofloxacin	S	S	S	R
	Ofloxacin	S	S	S	R
	Moxifloxacin	S	S	S	R
	Chloramphenicol	R	S	R	R
	Gentamicin	R	S	R	R
	<b>Biotype</b>	7577 77	7576 77	7577 77	7530 57

	<b>Organism Identification Name</b>	S. epidermis	S. epidermis	S. epidermis	S. sciuri
	Raffinose	+	-	+	-
	Arginine	+	-	+	-
	Voges - Proskauer	+	+	+	-
	BE	+	+	+	-
	PYR	+	+	+	-
	Urea	+	+	+	-
	Arabinose	-	-	-	+

Key: S = susceptible, I = intermediate, R = resistant, + = positive, - = negative

Legend:

Control refers to ATCC strains that were analyzed before the treatment.

Treated refers to -ATCC 'A' on 5th & 10th day after the treatment &  
- ATCC 'B' lyophilized that were treated directly

**Table 2:** Minimum Inhibitory Concentration values of antibiotics in mcg/ml.

<b>Antibiotics</b>	<b>Control</b>	<b>GROUP - I</b>		<b>GROUP -II</b>
		<b>Treated 5<sup>th</sup> day</b>	<b>Treated 10<sup>th</sup> day</b>	<b>Lyophilized - Treated Directly</b>
		<b>ATCC 'A'</b>	<b>ATCC 'A'</b>	<b>ATCC 'B'</b>
Azithromycin	>4	>4	>4	<=2
Ciprofloxacin	<=1	<=1	<=1	>2
Gatifloxacin	<=2	<=2	<=2	>4
Levofloxacin	<=2	<=2	<=2	>4
Ofloxacin	<=2	<=2	<=2	>4
Moxifloxacin	<=2	<=2	<=2	>4
Chloramphenicol	>16	<=8	>16	>16
Gentamicin	>8	<=4	>8	>8

