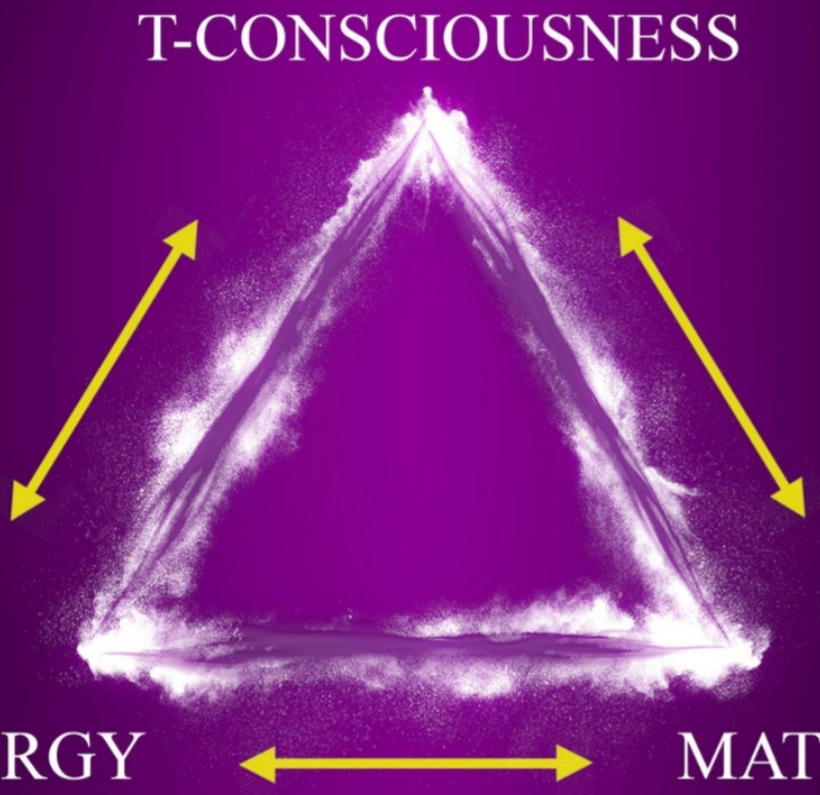
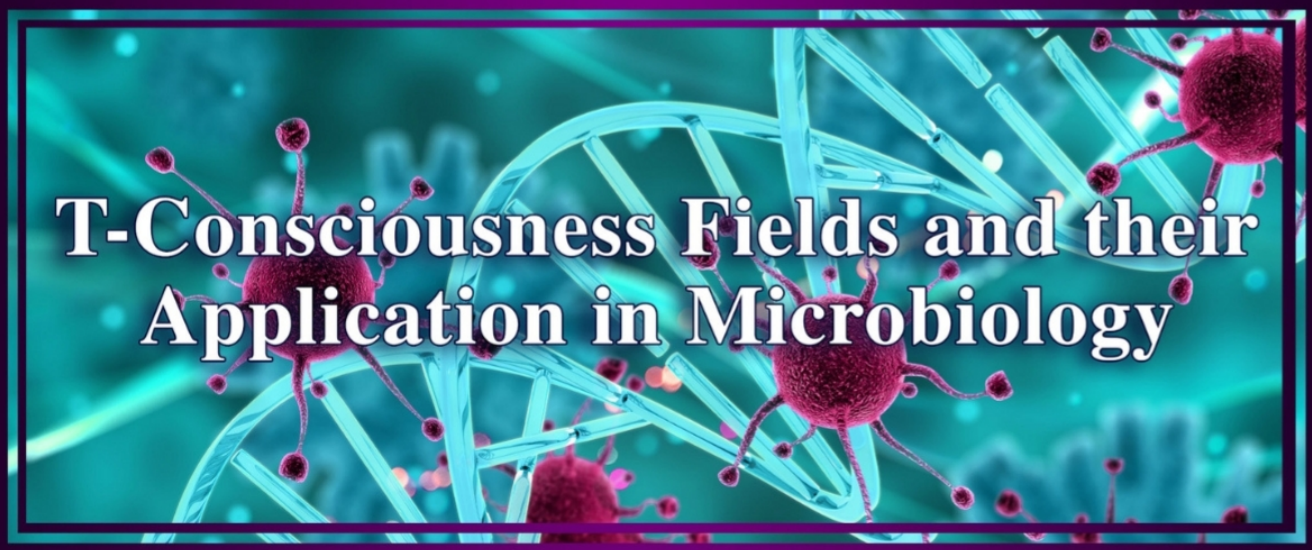
The Scientific Journal of
CosmoIntel
The First Scientific Journal in T-Consciousness Research
April 2022 | No.3





Mohammad Ali Taheri | Founder of T-Consciousness Theory

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The Scientific Journal of Cosmointel
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EDITORIAL

MOHAMMAD ALI TAHERI
Founder of
T-Consciousness Theory

The Journal of Cosmointel was established in 2022. It is an open-access, multidisciplinary journal that focuses on research related to T-Consciousness. The journal is published on a rolling basis to accommodate authors and allow for the flow of the large volume of written research that has been submitted and is becoming available for publication. Journal access is free to all users; registration will be available in the future to ensure receipt of updates on the publication of issues and news. The journal focuses on **Sciencefact** research results and is published by **Cosmointel Inc**.

The Journal of Cosmointel publishes scholarly articles from all fields of science, engineering, medicine, and social sciences that report experiments utilizing Taheri Consciousness Fields (TCFs). Given that Sciencefact focuses on researching the effects of TCFs that are new to the scientific world, the journal is not yet peer-reviewed in the traditional sense at this time (although, the journal articles currently do undergo a rigorous review process by the Cosmointel Committee of Scientific Researchers and Editors). It is our hope that this journal will expand far-reaching interest in the nature and function of TCFs and over time develop a broad base of trained and experienced researchers that will enable a more traditional peer-review process in the future. Cosmointel Inc. is the main monitoring center for **Taheri Consciousness Fields** studies based exclusively on Sciencefact principles. For more information, please visit www.comsointel.com .

Mohammad Ali Taheri is a scholar, visionary thinker, and innovationist known for his numerous theoretical concepts, including *Cosmic Consciousness Network (CCN)* and *Taheri Consciousness Fields (TCFs)* with over 40 years of history. T-Consciousness is introduced and defined as one of the constituent components of the Cosmos in addition to matter and energy, from which TCFs, as non-material/non-energetic

fields, are derived. TCFs are unique qualitative fields that are immaterial in nature but have a direct effect on matter and energy, including humans, animals, plants, microorganisms, cells, molecules, and particles. As far as the practical application of T-Consciousness is concerned, two complementary medicines of **Faradarmani** and **Psymentology** have been introduced and put into practice.

In 2020, Mohammad Ali Taheri introduced Sciencefact, that utilizes science as a means to demonstrate and record the effects of TCFs. Although science studies matter and energy alone, Sciencefact and science do share a common ground which is reproducible laboratory experiments that involve matter and energy. What distinguishes Sciencefact from science is the investigation and utilization of CCN through the application of the TCFs.

Established and managed by Mohammad Ali Taheri in 2022, the Journal of Cosmointel is an all-science journal that publishes original research on TCFs. As a scientific journal, all types of scientific research that adhere to ethical guidelines and publishing standards of Cosmointel Journal and T-Consciousness research protocol are eligible for publication. Cosmointel establishes the guidelines for conducting scientific research on TCFs and publishes the results in its journal spanning various disciplines, including biology, *T-Consciousness biology*, physics, engineering, material science, medicine, and neurosciences, psychology, etc.

From Taheri's point of view, T-Consciousness is neither matter nor energy. But, rather, matter and energy both arise from "T-Consciousness" and, when necessary, they are capable of converting back to "T-Consciousness" and vice versa. T-Consciousness operates through TCFs that can alter the *Mind-of-Matter*, which has recently been proven to exist by Sciencefact experiments. The results of these experiments demonstrate that TCFs are capable of rewriting a new *Matter-Memory* [for the *Mind-of-Matter*]. Depending on the different types of TCFs, different types of *Matter-Memory* and different types of programs are formed. According to these experiments, matter records information in itself through no physical or chemical process. This is the very first time that such a phenomenon is demonstrated in the history of consciousness.

Taheri Consciousness is composed of contrasting subsets that include T-Consciousness and Anti T-Consciousness which are being introduced for the first time in the history of this subject. It also consists of categories and functions such as *Constant T-Consciousness* and *Variable T-Consciousness*. It is important to note that the theories of *T-Consciousness Bond, General Connection of Par-ticles, T-Consciousness Charge, Communal-Mind,* and *T-Consciousness Aided Conception*, among many others that have been proposed for the very first time, have been subjected to various field research and laboratory experiments for the past several decades. Within the experience of *Communal-Mind* and *T-Consciousness Aided Conception*, the theory of *T-Consciousness Aided Information Transfer* has also been proposed.

As the above theoretical concepts elucidate, and according to the teachings of the school of **Erfan Keyhani Halqeh**, consciousness in Taheri's view (T-Consciousness) is entirely different from any and all views that, to this day, have been proposed about the concept of consciousness. Hence, it is for the purpose of differentiating between consciousness in Taheri's view and all other views presented throughout history that we call this theory by the specific term of *Taheri's Consciousness Theory (T-Consciousness)*.

All manuscripts must fit into at least one category of the phases outlined below:

The Phase-based Studies of T-Consciousness Fields in Sciencefact.

Sciencefact[11] is taking an unprecedented step by introducing T-Consciousness as a non-material and non-energetic constituent of the universe that can be experienced through the application of TCFs in various areas of science. In the methodology of modern science, laboratory experiments have always been the foundation of research, and their results have served as reliable and firm criteria for accepting or rejecting hypotheses. Sciencefact, as a new field of scientific study, shares a common ground with modern science, in that it too conducts experiments on matter and energy. Therefore, with the aim of investigating and verifying the effect and the mechanism of TCFs, the following process and steps are suggested to achieve scientific findings and to design testing methods in the field of Sciencefact:

Phase 0 Studies – Investigating the existence and effects of T-Consciousness Fields:

In this phase, the aim of the study design is to investigate merely the effect (regardless of its application) on the study system in reproducible, standard laboratory experiments. The results of this phase, first and foremost, confirm the existence of TCFs in a standard and limited study. The important factor in the studies of this phase is simplicity; the elimination of multiple and diverse variables with the aim of reaching more direct conclusions and analysis to confirm the existence of TCFs. The proper experimental design with minimal variables, confirmation of reproducibility of the study results, and meticulous presentation of the designed test conditions while detailing the effects of TCFs are among the essential and distinct factors in the studies of this phase.

Phase I Studies – Investigating the varied effects of different T-Consciousness Fields:

After completing phase zero (studying TCFs and designing a standard experiment to confirm their existence) the next step of Sciencefact studies deals with the types of TCFs and the potential variety of responses in the studied system. In this stage, after having confirmed the existence of TCFs (in phase zero), researchers explain the variation in the responses as a result of exposure to TCFs, and describe the results observed in the studied system based on justifiable and repeatable scientific documentation. Stating the standard conditions of study, detailing the effects of TCFs, and providing accurate reports of the effects of various TCFs on the system under study (utilizing approved statistical tests) are among the key factors in this phase (without secondary interpretations of the mechanism of action and by focusing exclusively on what has been observed).

Phase II Studies – Investigating the reason behind the [types of] effects of T-Consciousness Fields:

This phase establishes consistency between the results of the study and the theoretical basis of Taheri's teachings that introduce TCFs and their function. While meeting the objectives of phases zero and I, the researchers present proper and accurate analysis to give an account of corresponding relations between the basis of the reported results and the fundamentals of Taheri's teachings with clarity and according to the

1. A term coined by Mohammad Ali Taheri to introduce this new science.

approved standards of Sciencefact in terms of the special topic of T-Consciousness. For example, in phase II cell studies, after having observed the proliferation of cells in the cell culture medium and presenting data confirming the existence of the TCFs, and after reporting the possible variation of the effects of TCFs, we begin to explain the results based on the principles of T-Consciousness that governs the cell inside the culture medium. Accuracy in establishing a correct and precise correspondence between the obtained results and the Source Texts of Taheri's teachings (without the researcher's personal impression) is crucial and among key factors in this phase.

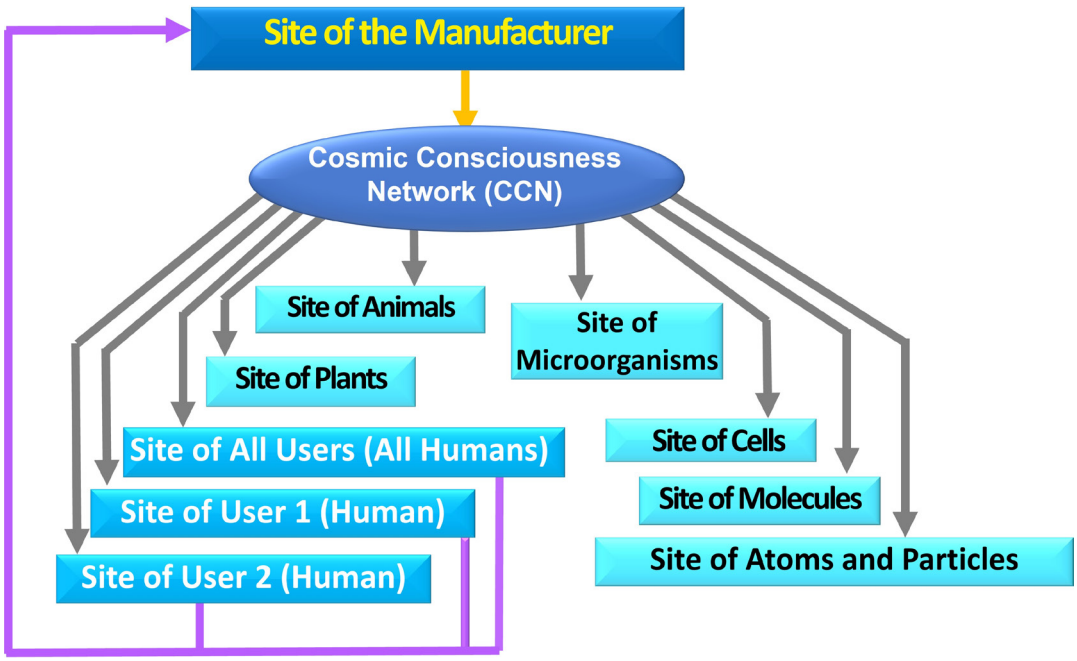
Phase III Studies - Investigating the mechanism of T-Consciousness Fields' effects:

The most advanced types of experiments designed in the study of TCFs are phase III experiments. In these studies, after completing the previous three stages in the preliminary phases and conducting additional and validating tests by researchers, the mechanism of the TCFs' effects on the studied system is meticulously examined. Among the prerequisites for this phase are rigorous experimental design, sufficient and well-reasoned analysis in accordance with the scientific method, and sufficient command of the principles of Taheri's teachings and the fundamentals of TCFs. In this phase, it will be possible to propose a new scientific theory based on empirical evidence.

Phase IV Studies –

Drawing macro-conclusions pertaining to the mind and memory of matter, etc.

Cosmic Consciousness Network (CCN)
or
Cosmic Internet According to Taheri



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The First Journal in T-Consciousness Research

Influence of Faradarmani Consciousness Field on Bacterial Population Growth

Mohammad Ali Taheri[1], Gholamreza Zarrini[2], Sara Torabi[3], Noushin Nabavi[4], Mehrnoush Taherkhani[5], Farid Semsarha[*6]

1. Sciencefact R&D Department, Cosmointel Inc. Research Center, Ontario, Canada

2. Department of Biology, Faculty of Natural Sciences, University of Tabriz, Tabriz, Iran

3. Department of Plant Biology, School of Biology, College of Sciences, University of Tehran, Tehran, Iran

4. Research Services at University of Victoria, BC, Canada

5. Microbiology department of Industrial health center telecommunication infrastructure company,Tehran,Iran. Email:Mehrtaher11@gmail.com

6. Institute of Biochemistry and Biophysics (IBB), University of Tehran, Tehran, Iran

*Corresponding author:

Farid Semsarha
Ph.D., Institute of Biochemistry and Biophysics (IBB), University of Tehran, P.O. Box: 13145-1384, Tehran, Iran.

E-mail: Semsarha@alumni.ut.ac.ir

ABSTRACT

The treatment of bacterial infections and the rising challenges of antibiotics resistance are global concerns and the primary topics in basic science and clinical microbiology. In the present study, the effects of treatment of selected populations of bacteria using an immaterial and non-energetic method called Faradarmani Consciousness Field (FCF) treatment are investigated. Population growth was assessed by turbidimetry, colony counting, and tetrazolium chloride reduction assays in non-treated control and Faradarmani-treated groups. Our results suggest the effect of the Faradarmani CF on reducing various types of bacterial strain growth rates (up to 46%). In addition, along with a decrease in the bacterial population, evidence of increased survival can be seen in the larger healthy population (up to about 60%). In this experiment, we confirm the effects of the Faradarmani CF on the bacterial growth population and their survival. These results suggest Faradarmani CF as a qualitative treatment and this evidence paves the way for further investigation on TCFs. This study also warrants additional research.

Keywords: Faradarmani; Taheri Consciousness Fields; laboratory bacteria; nosocomial bacteria; population decline; survival assay

INTRODUCTION

Bacteria have existed before humans as the first forms of life on earth, with the need to adapt to environmental conditions and changes in time. Many bacteria use 'quorum sensing' (QS) to control their gene expression in response to their population density. During specific stages of growth or other inputs like environmental stresses, the bacteria produce signaling molecules at a threshold concentration, which signal other regulators that can induce or repress target genes (Frederix et al., 2011). Bacteria with the development of communication capabilities (e.g., quorum sensing, chemotactic signaling, and plasmid exchange), afford better adaptability to growth conditions (Ben-Jacob, 2003). Additionally, bacteria can form structured colonies to increase their benefits from accessing resources, a characteristic that individual bacterial cells cannot effectively utilize (Shapiro, 1998).

Much research has been performed to study bacterial growth properties and characteristics (Schaechter, 2015). It has been demonstrated that bacteria will grow in a predictable pattern, with four distinct phases, when placed in a suitable medium. Initially, the bacteria will grow rather slowly (lag phase), before reaching a maximum growth rate with greater rapidity (log phase). Following that, bacteria reach a plateau phase where the rate of growth and death becomes equal (stationary phase). In the final decline phase, the rate of cell death exceeds the rate of growth. The growth curve of the bacterial population is similar to other living populations in a restricted area (Henrici, 1928). In a way, bacteria have the ability of 'linguistic' communication and social intelligence (Jacob et al., 2004).

Antibiotics have been developed to combat disease-causing bacteria, such as infections, tuberculosis, gonorrhea, plague, or anthrax, among others. However, bacteria have the ability to become resistant to antibiotics under prolonged selection pressures. According to the Center for Disease Control and Prevention (CDC) (Control et al., 2014), antibiotic resistance is one of the most serious health threats. Each year in the U.S., at least 2.8 million people get an antibiotic-resistance infection, and over 35,000 people die. Due to the increase in resistance rates to conventional antibiotics, alternative methods such as bacteriophage therapy (Golkar et al. 2014), predatory bacteria (Kadouri et al., 2013), or bacteriocins (Cotter et al., 2013) are being investigated. Additionally, many varieties of compounds produced by plants have proved to have therapeutic potentials and antimicrobial effects or elicit modifications to antibiotic resistance (Sibanda et al., 2007). Another alternative for growth inhibition of resistant bacteria is attenuation of bacterial virulence by inactivating the QS system of a pathogen (Hentzer et al., 2003).

Very little information is available on the complementary therapy methods that can induce changes in bacterial population growth status in culture media. The nature of consciousness and its place in science have received much attention in the current century. Many philosophical and scientific theories have been proposed in this area. In the1980s, Mohammad Ali Taheri introduced novel fields with a non-material/non-energetic nature named Taheri Consciousness Fields (TCFs). In this perspective, T-Consciousness is one of the three existing elements of the universe apart from matter and energy. According to this theory, there are various TCFs with different functions, which are the subcategories of a networked universal internet called the Cosmic Consciousness Network (CCN). The major difference between the theory of TCFs and other theoretical concepts about consciousness is related to the practical application of the TCFs. These fields can be applied to all living

and non-living creatures, including plants, animals, microorganisms, materials, etc.

Mohammad Ali Taheri, the founder of Erfan Keyhani Halqeh, a school of thought, introduced a new science in 2020 as a branch of this school. He coined the term Sciencefact for this new science because it utilizes scientific investigations to prove the existence of T-Consciousness as an irrefutable phenomenon and a fact. Although science focuses solely on the study of matter and energy and Sciencefact, by contrast, explores the effects of the [non-material/non-energetic] TCFs, Sciencefact has provided a common ground between the two by conducting reproducible laboratory experiments in various scientific fields, and it has used the scientific approach in proving TCFs.

The influence of the TCFs begins with the Connection between CCN as the Whole Taheri Consciousness of the universe and the subjects of study as a part. This Connection called "Ettesal" is established by a Faradarmangar's mind (a certified and trained individual who has been entrusted with the TCFs). The human mind has an intermediary role (Announcer) which plays a part by fleeting attention to the subject of study and then the main achievement obtained as a result of the effects of the TCFs. These fields cannot be directly measured by science, but it is possible to investigate their effects on various subjects through reproducible laboratory experiments (Taheri 2013).

The research methodology in the study of T-Consciousness has been founded on the process of *Assumption, Argument, and Proof*, in which the basic Assumption is: The Cosmos was formed by a third element called T-Consciousness that is different from matter and energy.

The Argument: The existence of TCFs can be demonstrated by their effects on matter and energy (e.g., humans, animals, plants, microorganisms, cells, materials, etc.)

The Proof is the scientific verification of the effects of TCFs on matter and energy (according to the Argument) through various reproducible scientific experiments.

Accordingly, to investigate and verify the existence, effects and mechanisms of TCFs, the following five research phases (Phases 0 through 4), and the aims of each phase are outlined below.

Phase-0 studies aim to prove the existence of TCFs by observing their effects. The nature of T-Consciousness and what it is will not be addressed in this phase. Phase-1 explores the varied effects of different TCFs. Phase-2 examines the reason behind the varied effects of these fields. Phase-3 investigates the mechanism of TCFs effects on matter and energy. Finally, Phase-4 draws significant conclusions, particularly with regard to the *mind and memory of matter* and their relation to the T-Consciousness, etc.

In previous studies, the effects of Faradarmani CF were investigated on change in cancer cell growth (Taheri et al., 2020a), electrical activity in the brain of Faradarmangars (Taheri et al., 2020b), and wheat plants (Torabi et al., 2021). In this study, the influence of Faradarmani Consciousness Field on the growth behavior of different populations of laboratory and nosocomial bacterial strains is investigated.

MATERIALS AND METHODS

Faradarmani Consciousness Field application

TCFs were applied to the subjects of this study according to the protocols mentioned on the website of the TCFs research center (www.cosmointel.com). Obtaining an announcement (Connection to the CCN) is free of charge (in the "Assign Announcement" section). In order to study at any time and place, the researchers are asked to in-

troduce the test specifications including the number of samples and their assigned names to the guidance center. It should be noted that this study was conducted in a double-blinded way, meaning that the experts were completely unfamiliar with TCFs theory. Also, the person who established the T-Consciousness Connection was unfamiliar with the details of this study.

Turbidimetry of the primary selected bacterial strains at 24 hours

Bacterial growth under the influence of Faradarmani CF was measured by turbidimetry at OD600 nm in tube cultures. For this purpose, 36 test tubes containing 10 ml of Müller-Hinton Broth medium were prepared and autoclaved. Two sets of the culture tubes were inoculated with 102 and 105 cfu/ml of test microorganisms. Control and treatment samples were placed in a separate holder in an incubator at different levels. A sampling of cultures was done 24 hours after the start of incubation with a volume of 1.5 ml.

Bacterial growth analysis at different time intervals

For additional interpretation of the growth behavior of bacteria under treatment, bacterial growth changes were measured by three methods: (1) turbidimetry at OD 600 nm, (2) colony counting, and (3) assay of the bacterial regenerative power in reduction of tetrazolium chloride. To evaluate the effect of Faradarmani CF in different time intervals, sampling was done three times in two different experiment steps: in the first step, at 6, 16 and 24 hours and in the second step at 1, 3 and 6 hours.

In this experiment section and in the first step, 8 test tubes containing 10 ml of Müller-Hinton Broth medium and 8 Erlenmeyer 100 containing 20 ml of Müller-Hinton Broth were prepared and autoclaved. For each of the studied microorganisms in step 1, one tube and one Erlenmeyer flask were considered as the control group and one tube and Erlenmeyer flask was considered as the treatment group. In step 2, only growth in the Erlenmeyer flask was considered.

One ml of bacteria with 105 cfu/ml was added to each tube and Erlenmeyer flask culture medium. Control and treatment samples were placed in a separate holder in an incubator on the different levels. Erlenmeyer flasks were placed in shaker incubators with separate rows and the longest distance between control and treatment samples. A sampling of cultures was done at 6, 16 and 24 hours (in step 1) and at 1, 3 and 6 hours (in step 2) after the start of incubation with a volume of 1.5 ml. Turbidity was measured at 600 nm (for step 1 of this experiment section) and surface culture was done for colony count (in two replications) for each culture medium in the two mentioned steps. For cell survival assay by tetrazolium chloride, in step 1, we added 10 µl of 1 mg/ml aqueous solution to 1 ml of microbial sample and after one hour of incubation at 35 °C, the absorbance of the samples was read at 495 nm. In step 2, all procedures were similar to step 1, except that the concentration of tetrazolium chloride was used at 100 times more than in step 1.

RESULTS

Faradarmani CF Effect on the primary selected bacterial strains at 24 hours

In order to investigate the effect of Faradarmani CF on bacteria, four laboratory strains and five nosocomial strains were used. Efficacy was reported based on the percentage of reduction of microbial populations, as shown in Table 1.

According to the results presented in Table 1, the highest decrease in the percentage of laboratory microbial populations was observed in the 10^5 cfu/ml concentration of S. aureus and the lowest decrease was observed in the same concentration in the case of *E. coli*. The varying initial microbial populations of gram-positive or negative bacteria do not show a significant difference in the results. Moreover, in nosocomial bacteria, the highest decrease in the percentage of the microbial population was observed in the 10^5 cfu/ml concentration of *S.aureus (2)* and the lowest decrease in the same concentration in the case of *S. aureus (2)*. Overall, according to the results, the effects of the Faradarmani CF on nosocomial strains are less than that of laboratory strains.

Faradarmani CF influence on bacterial growth at different time intervals

Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus and *Bacillus subtilis*, were used to study the effect of Faradarmani CF treatment on the growth behavior of bacteria. In the first step, the growth of the selected strains was examined at 6, 16, and 24 hours in both tube and Erlenmeyer flask culture of bacteria through turbidity measurements, colony counting, and tetrazolium chloride reduction methods. After consideration of the results of the first step of this section, in the second step, similar studies were done at 1, 3, and 6 hours in Erlenmeyer flask condition through colony counting and tetrazolium chloride method as discussed below.

Turbidity measurements

In order to investigate the results of the previous section and to study changes in populations at different times, we assessed bacterial growth by the turbidimetric method at 6h, 16h and 24h. The tube method is the conventional way of studying the

Table1. Absorption changes at 600 nm for tube bacterial culture at 24 hours.

Types of strain	Strain*	Characteristics (Gram)	%Reduction (Early population: 10^2)	%Reduction (Early population: 10^5)
Laboratory	*E.coli*	Symbiotic (G-)	18.38	8.7
	K.pneuomoniae(1)	Symbiotic (G+)	33.78	17.32
	S.aureus(1)	Symbiotic (G+)	24.17	45.04
	B.subtillis	Environmental (G+)	24.4	26.98
Nosocomial	*P.aeruginosia(1)*	Pathogenic (G-)	4.2	6.2
	P.aeruginosia(2)	Pathogenic (G-)	1.7	12.7
	K.pneuomoniae(2)	Pathogenic (G+)	5.6	0.7
	S.aureus(2)	Pathogenic (G+)	5.4	0.6
	S.aureus(3)	Pathogenic (G+)	7.6	1

* The numbers in parentheses refer to different strains of a bacterial species.

antimicrobial effects of antibiotics, whereas the Erlenmeyer flask provides a more suitable growth medium for bacteria due to better aeration and uniformity of the growth medium. In this study, to determine the effect of treatment, both tube and Erlenmeyer methods were used, and the results are shown in tables 2 and 3.

The results of tube and Erlenmeyer flask culture by turbidity measurement show that there are differences in the absorption of control and treatment samples, and the difference in absorption for the 6-hour culture time is greater than the 16-hour and 24-hour culture time. The difference in absorption in 6 hours after culture shows a greater difference, which can be due to the greater effect of Faradarmani CF treatment on bacteria during this time. This trend can also be compensated by the growth of bacteria in the continuation of cultivation. Interestingly, we observed an increase in growth and colony counts (number of colonies) of the reduced population of bacteria in cases such as the 24-hour culture of *E.coli* and *B. subtilis* , in both tube and Erlenmeyer flask cultures.

Colony count measurements

Since live and dead bacteria are indistinguishable in the turbidity method, the colony counting method was used to measure the status of bacte-

Table2. Absorption change at 600 nm for tube bacterial culture at 6, 16 and 24 hours in Control and Faradarmani Consciousness Field treatment samples.

Types of strain	Strain	OD_{600nm}						Efficacy of treatment (%) (-): Decrease in population (+):Increase in population		
		6 hours		16 hours		24 hours				
		Control	Treatment	Control	Treatment	Control	Treatment	6h	16h	24h
Laboratory	*E. coli*	0.168	0.121	0.436	0.409	0.878	0.950	-27	-6	+8
	B. subtilis	0.023	0.021	0.161	0.148	0.333	0.282	-8	-8	-15
Nosocomial	*P. aeruginosa*	0.121	0.113	0.379	0.125	0.985	0.853	-7	-67	-13
	S. aureus	0. 152	0.132	0. 157	0. 135	0.195	0.192	-13	-14	-1.5

Table3. Absorption change at 600 nm for bacterial culture in Erlenmeyer flask culture at 6, 16 and 24 hours in Control and Faradarmani Consciousness Field treatment samples.

Types of strain	Strain	OD_{600nm}						Efficacy of treatment (%) (-): Decrease in population (+):Increase in population		
		6 hours		16 hours		24 hours				
		Control	Treatment	Control	Treatment	Control	Treatment	6h	16h	24h
Laboratory	*E. coli*	0.157	0.125	1.635	1.428	2.403	2.295	-20	-12	-4
	B. subtilis	0.025	0.015	0.936	0.841	2.380	2.440	-40	-10	+2
Nosocomial	*P. aeruginosa*	0. 380	0.301	0.606	0.532	1.816	1.680	-20	-12	-7
	S. aureus	0. 150	0.126	0.204	0.222	2.208	1.981	-16	+8	-10

ria in the culture medium. For this purpose, in the first step, tube and Erlenmeyer flask cultures were cultured at 6, 16, and 24 hours in Müller-Hinton medium with two replications and then counted. The results of colony count are given in Tables 4 and 5.

Colony count results for 24-hour samples were not possible due to overgrowth (NC) and in cases where the count numbers of one of the control or treatment samples were not obtained, it was not possible to determine the percentage of treatment efficiency. In other cases, the results of colony counts showed the effects of the Faradarmani CF treatment on declining the bacterial population, although, in the case of *P. aeruginosa* at 6 hours, the opposite result (increase in population) was observed.

In step 2 and after observing the effects of the Faradarmani CF in the first step in turbidity measurement and colony counting, the colony counting of Erlenmeyer flask samples was repeated and sampling was done at 1, 3, and 6 hours. The results of this step are given in Table 6.

As can be seen in Table 6, the effects of the Faradarmani CF treatment in the first hour of study are greatest in the two laboratory strains and *P. aeruginosa*. Moreover, *S. aureus* shows the greatest reduction up to 3 hours. These results are in agreement with Table 2, which demonstrates a decrease even in the early treatment times.

Table4. Colony count results of Faradarmani Consciousness Field treatment and control samples in tube culture method at 6, 16 and 24 hours.

Types of strain	Strain	Colony Count						Efficacy of treatment (%) (-): Decrease in population (+):Increase in population		
		6 hours/104		16 hours/10^6		24 hours				
		Control	Treatment	Control	Treatment	Control	Treatment	6h	16h	24h
Laboratory	*E. coli*	NC*	NC	357	285	NC	NC	ND**	-20	ND
	B. subtilis	55	40	20	16	NC	NC	-27	-20	ND
Nosocomial	*P. aeruginosa*	398	NC	49	41	NC	NC	ND	-16	ND
	S. aureus	310	184	37	29	NC	NC	-39	-25	ND

NC * means uncountable; ND** Not determined

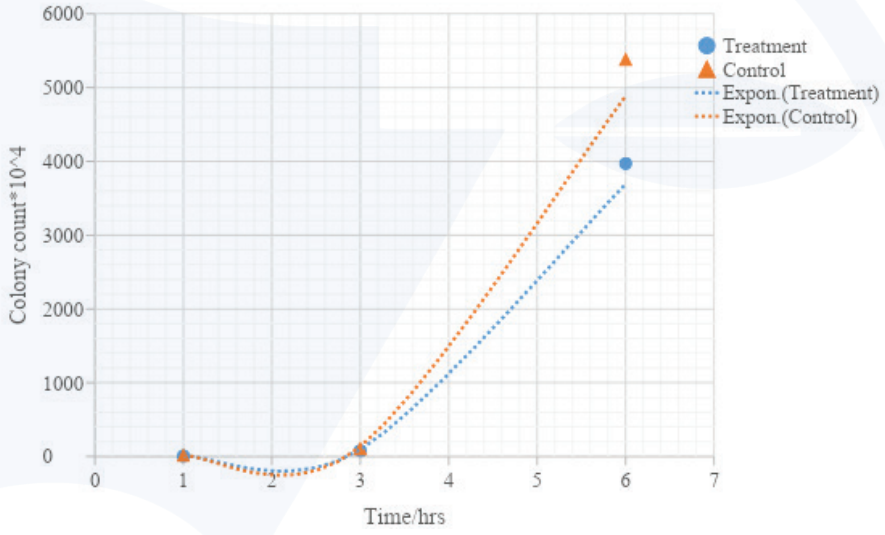
Table5. Colony count results of Faradarmani Consciousness Field treatment and control samples in Erlenmeyer flasks at 6, 16 and 24 hours.

Types of strain	Strain	Colony Count						Efficacy of treatment (%) (-): Decrease in population (+):Increase in population		
		6 hours/10^4		16 hours/10^6		24 hours/10^8				
		Control	Treatment	Control	Treatment	Control	Treatment	6h	16h	24h
Laboratory	*E. coli*	NC	1328	433	320	NC	NC	ND	-26	ND
	B. subtilis	190	124	51	45	NC	NC	-34	-11	ND
Nosocomial	*P. aeruginosa*	169	179	487	352	NC	NC	+6	-27	ND
	S. aureus	NC	100	64	53	NC	NC	ND	-16	ND

Table6. Colony counting of Faradarmani Consciousness Field treatment and control samples in Erlenmeyer flasks at 1, 3 and 6 hours.

Types of strain	Strain	Colony Count						Efficacy of treatment (%) (-): Decrease in population (+):Increase in population		
		1 hours/10^4		3 hours/10^4		6 hours/10^5				
		Control	Treatment	Control	Treatment	Control	Treatment	1h	3h	6h
Laboratory	*E. coli*	14	9	105	78	538	397	-35	-23	-26
	B. subtilis	3.4	2.2	6.2	4.3	9.6	7.5	-34	-30	-22
Nosocomial	*P. aeruginosa*	26	13.9	77	48	293	222	-46	-37	-24
	S. aureus	11.9	9.1	35	24	88	73	-23	-31	-17

A



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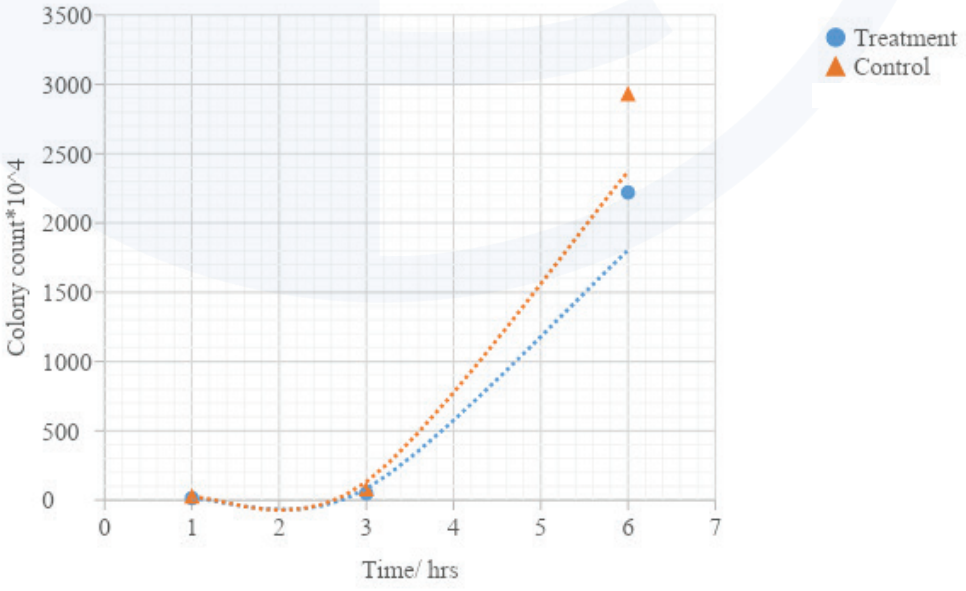


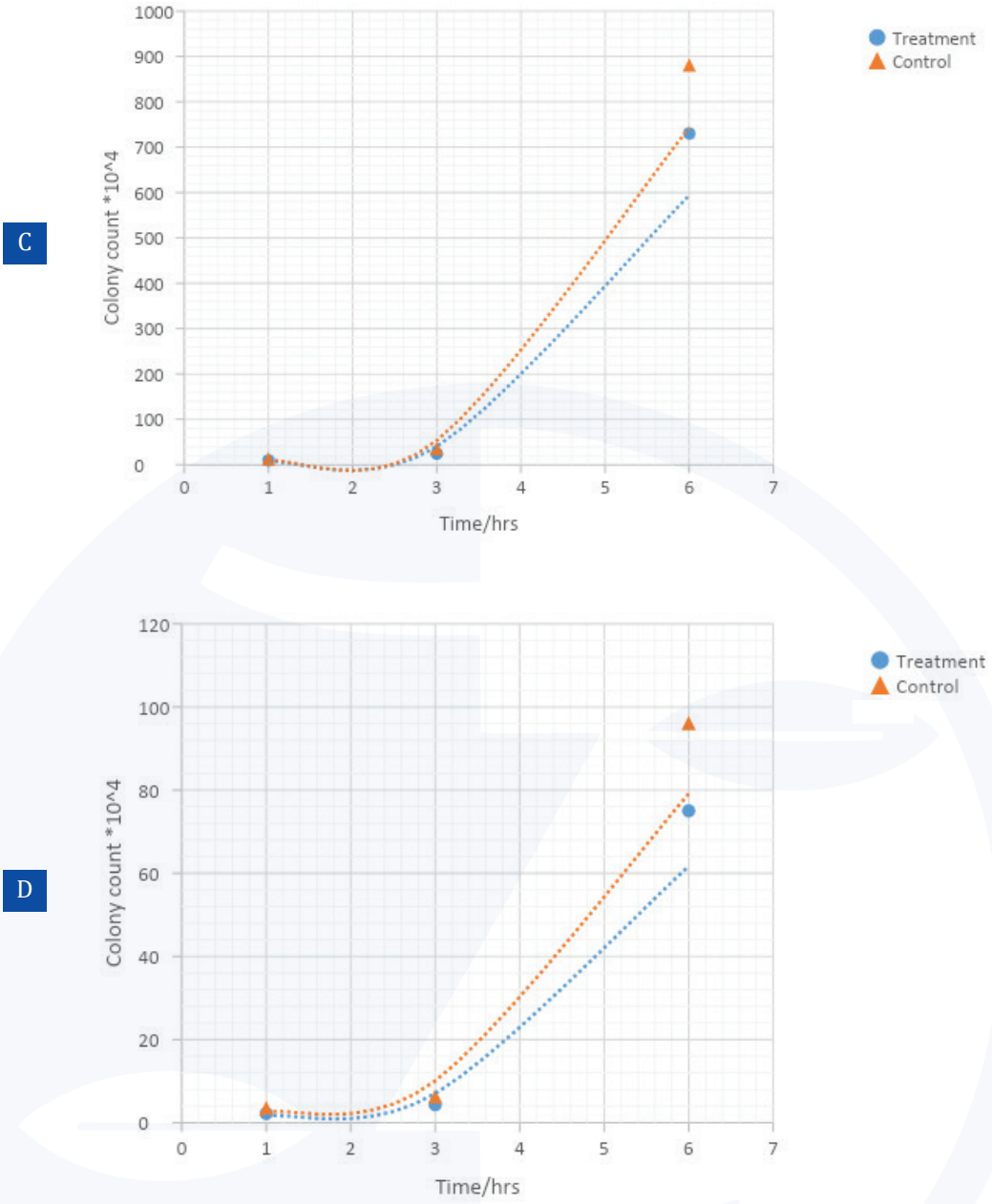


Figure 1. Exponential growth plot in the first three hours of the bacterial life cycle of Faradarmani Consciousness Field treatment sample in comparison with the control samples. A: *E. Coli.* B: *B. Subtilis* C: *P. aeruginosa.* D: *S. aureus*.

As shown in figure 1, the exponential growth plot in the first 6 hours of the Faradarmani CF treatment and control population shows a significant and visible effect of this field on the various bacterial populations in the first 1 to 3 hours of the bacterial growth.

Tetrazolium chloride reduction assay

Tetrazolium chloride compound was used to evaluate the metabolic status of bacteria and possible changes in bacterial regenerative power that indicate cell viability. The reduction of tetrazolium chloride by dehydrogenase enzymes in healthy bacterial cells produces a red color that is capa-

ble of absorbing light at 495 nm. For the tetrazolium chloride method in the first step, in 6 and 16 hours, we did not record a measurement due to low microbial concentration and low color. The earliest time measurement was possible was at the 24 hours as shown in Table 7.

The Erlenmeyer flask culture shows a more consistent result with the population decline in the previous methods. However, the results of this method for tube culture of bacteria are consistent with previous results and show a higher growth rate in the treated microbial samples than in the control (compared to efficacy results in tables 2, 3 and 5). Tetrazolium chloride assay was also done on bacterial populations at 1, 3 and 6 hours, as shown in Table 8.

In Table 8, the longer time in the Tetrazolium chloride reduction assay causes the greatest decrease in populations and survival occurs only in the first 1 hour of the experiment (in the case of *B. subtilis* in the first 3 hours).

Table7. Tetrazolium chloride reduction assay of tube and Erlenmeyer flask bacterial culture by absorbing light at 495 nm at the 24 hours in Control and Faradarmani Consciousness Field treatment samples.

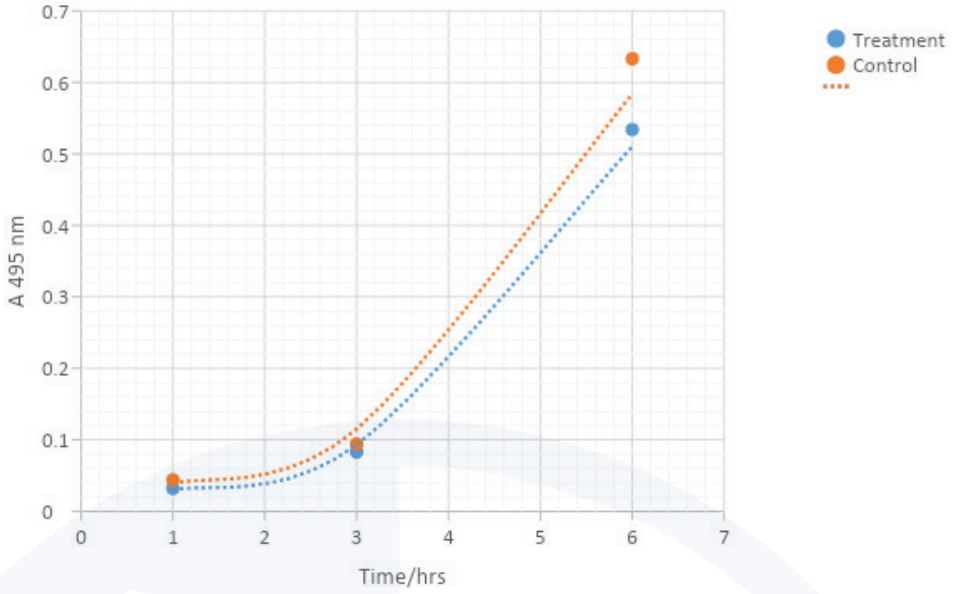
Types of strain	Strain	Tube culture			Erlenmeyer flask culture		
		A_{495nm}		Efficacy of treatment (%)*	A_{495nm}		Efficacy of treatment (%)*
		Control	Treatment		Control	Treatment	
Laboratory	*E. coli*	1.7519	1.1173	-36	1.1426	1.0929	-4
	B. subtilis	0.4960	0.7915	+59	0.3839	0. 2790	-27
Nosocomial	*P. aeruginosa*	0.6679	0.7043	+5	2.4616	2.0637	-16
	S. aureus	0.6063	0.7886	+30	0.7366	0.6544	-11

* +: Increase in population; -: Decrease in population

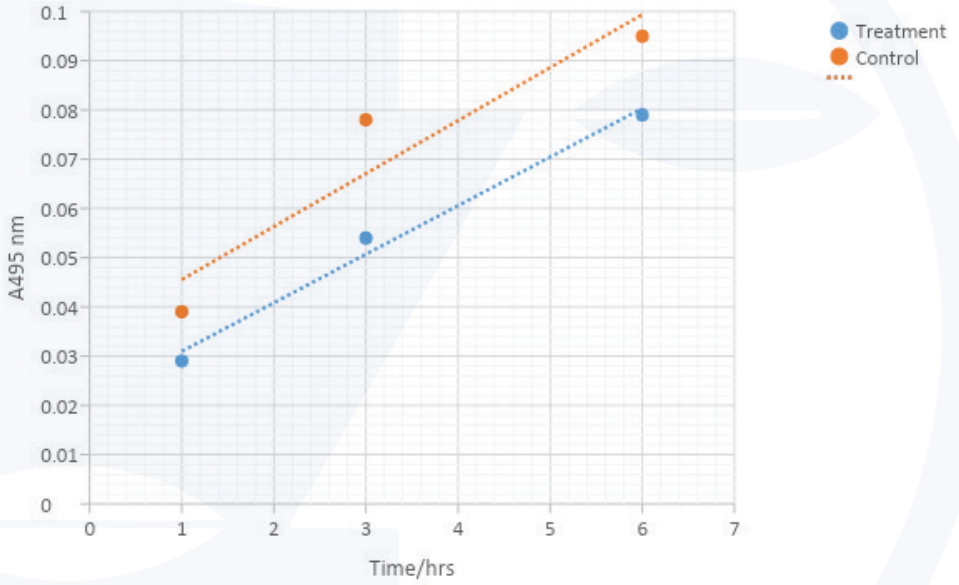
Table8. Tetrazolium chloride reduction assay of Erlenmeyer flask bacterial culture by absorbing light at 495 nm at 1, 3, and 6 hours in Control and Faradarmani Consciousness Field treatment samples.

Types of strain	Strain	A_{495nm}						Efficacy of treatment (%)		
		1 hour		3 hours		6 hours				
		Control	Treatment	Control	Treatment	Control	Treatment	1h	3h	6h
Laboratory	*E. coli*	0.044	0.032	0.094	0.083	0.633	0.534	-27	-11	-15
	B. subtilis	0.039	0.029	0.078	0.054	0.095	0.079	-25	-30	-17
Nosocomial	*P. aeruginosa*	0.058	0.046	0.085	0.076	0.169	0.134	-20	-10	-20
	S. aureus	0.054	0.037	0.067	0.063	0.094	0.086	-31	-5	-8

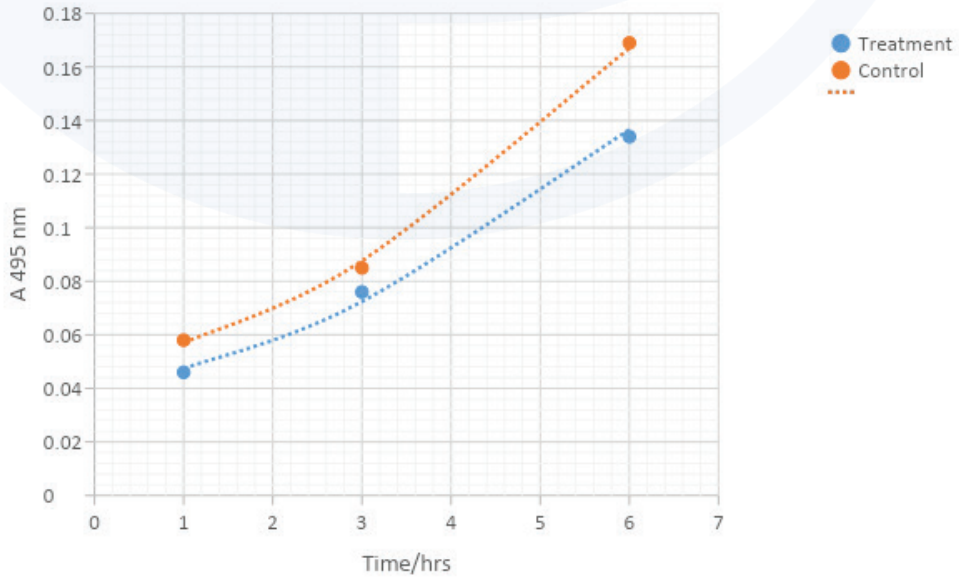
A


A 495 nm
Time/hrs
Treatment
Control

B


A495 nm
Time/hrs
Treatment
Control

C


A 495 nm
Time/hrs
Treatment
Control

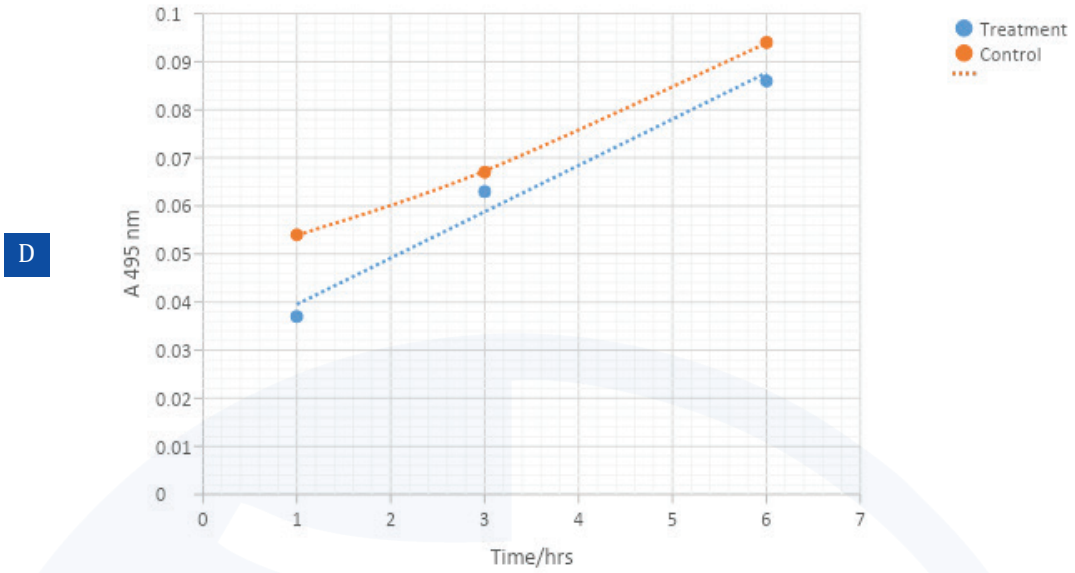


Figure 2. Change in tetrazolium chloride reduction in the first three hours of the bacterial life cycle of Faradarmani Consciousness Field treated sample in comparison with the control samples. A: *E.coli*. B. *B.subtilis*. C: *P. aeruginosa*. D: *S. aureus*.

Figure 2 depicts exponential and logarithmic graphs of reduced rates of bacterial growth in tetrazolium chloride assay. Similar to the data obtained from other measurement methods for the same strains, we observe a general reduction in regenerative capacity in the Erlenmeyer culture treatment samples. The increase in regenerative capacity at 3 hours, in the case of *S. aureus* treatment, indicates better survival condition of the remaining bacterial populations, when compared to the tube culture of *B. subtilis*, *P. aeruginosa*, and *S. aureus* strains.

DISCUSSION

Changes in the bacterial populations under Faradarmani Consciousness Field, as mediated by the human mind, is a novel study. The experiments in this study were initially performed on the diverse bacterial populations to evaluate the initial effects of the T-Consciousness Field 24 hours after the start of cultivation and treatment. In order to examine the reproducibility of the results and better interpret them, strains were selected from these tests, and at other intervals of the bacterial growth cy-cle (6 to 24 hours) through sampling, repetition, and completion of growth tests. Finally, in the last stage, after confirming the observations in the previous stages, a supplementary study was performed to investigate the effects of the T-Consciousness Field, at shorter intervals of the bact erial life cycle (less than 6 hours).

T-Consciousness Fields are immaterial and non-energetic fields with the ability to affect a variety of living and non-living systems from the atom to cells, to organisms. The general functions of these fields are to establish a *connection* between the subject under study and the CCN, with the aim of reconstructing, modifying, and repairing in order to achieve the optimal structure and performance of the system under study in its environment. What is observed in the present study is the reproducibility of a significant effect of the T-Consciousness Field on bacterial

population growth. This effect occurs at first glance, with a decrease in growth. On closer inspection, we found a concomitant change in the remained bacterial populations that have a higher ability to live and survive. In examining the results of the effect of Faradarmani CF on bacterial population growth and comparing it with respective control groups, the following summaries can be made: (1) The Faradarmani CF affects the selected population of bacteria in this study. This effect has been proved by studying different types of strains and repeating the study and sampling at different times and using complementary live and dead assay methods; (2) The effect of Taheri Conscious-ness Field treatment begins in the first hour of bacterial culture, simultaneously with the start of treatment and the synchronicity between the treatment and its effects can be observed.

(3) The effect has two manifestations: (a) population declines up to 46% in different bacte-ria and its evidence is seen in both tube and Erlen-meyer culture media at different times of sampling (different stages of the bacterial life cycle), and (b) increase in the ability to regenerate and survive in the remaining bacterial populations, which in the conditions of tube culture are up to 60% in different bacterial strains; (4) laboratory bacterial strains show a greater decrease in growth than nosocomial strains with no significant difference in the initial population of bacteria or in their gram-positive or negative characteristics; (5) Changes in environmental conditions (comparison of tube culture and Erlenmeyer cultur e) show the effects of the T-Consciousness Field dif erently : the tube culture conditions, which are considered harsh environmental conditions for bacterial life, perform better than Erlenmeyer environment in showing the effect of the T-Consciousness Field on bacterial survival.

CONCLUSION

According to Taheri's theory, T-Consciousness is neither matter nor energy, therefore, it is non-quantifiable and cannot be directly observed or measured. However, it is possible to screen its effects through various experiments. In order to further investigate bacterial populations affected by the TCFs, studies on other bacterial strains and especially on the antibiotic resistance of important nosocomial resistance bacterial strains are strongly recommended. Given the reproducibility of the application of TCFs, we suggest other re-searchers conduct studies on other types of TCFs to observe the metabolic and physiological changes of bacteria under the influence of these newly explored fields.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the Department of Biology, Faculty of Natural Sciences, University of Tabriz, Tabriz, Iran, for providing data acquisition service for this research work.

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Influence of Faradarmani Consciousness Field on Antibiotics Resistance in Bacteria

Mohammad Ali Taheri [1], Gholamreza Zarrini [2], Sara Torabi [3], Noushin Nabavi [4], Mehrnoush Taherkhani [5], Farid Semsarha [*6]

1. Sciencefact R&D Department, Cosmointel Inc. Research Center, Ontario, Canada

2. Department of Biology, Faculty of Natural Sciences, University of Tabriz, Tabriz, Iran

3. Department of Plant Biology, School of Biology, College of Sciences, University of Tehran, Tehran, Iran

4. Research Services at University of Victoria, BC, Canada

5. Microbiology department of Industrial health center telecommunication infrastructure company,Tehran,Iran. Email:Mehrtaher11@gmail.com

6. Institute of Biochemistry and Biophysics (IBB), University of Tehran, Tehran, Iran

*Corresponding author:

Farid Semsarha
Ph.D., Institute of Biochemistry and Biophysics (IBB), University of Tehran, P.O. Box: 13145-1384, Tehran, Iran.

E-mail: Semsarha@alumni.ut.ac.ir

ABSTRACT

The development of antibiotics resistance arising from antibiotic over-treatment is the major challenge in eliminating harmful bacteria and is associated with grave financial and human consequences worldwide. The contraction of resistant bacteria from hospitals is a key concern and many scientific research fields are aiming to develop strategies that prevent bacterial resistance to antibiotics. Taheri Consciousness Fields, as novel Fields, were found-ed and introduced by Mohammad Ali Taheri. These Fields are neither matter nor energy, therefore cannot be measured directly. But it is possible to study their effects on objects through controlled experiments. After investigating the effect of Faradarmani Consciousness Field on bacterial populations in a previous study, we aimed to investigate the effect of Faradarmani CF on antibiotic resistance of bacteria in identified hospital strains. As confirmed by disk diffusion and MIC methods, we found that resistance in the bacteri-al populations was altered. Specifically, *P.aeruginosa*, *E.coli*, *B.subtilis*, *K.pneumoniae*, *A.bummani*, and *S.aureus* strains showed a decrease in antibiotics resistance while *S.aureus* and *P.aeruginosa* strains showed a decrease in antibiotics resist-ance while *S.aureus* and *P.aeruginosa* strains showed an increase in resistance to antibiotics. Based on the results, Faradarmani CF has the ability to affect antibiotics resistance response in resistant populations. We suggest this observation requires further attention. In the event the obser-vations can be replicated by other researchers, Faradarmani CF could be considered an effective solution to this global issue.

Keywords: Antibiotics resistance, Taheri Consciousness Field, Disk diffusion method, Faradarmani, MIC method

INTRODUCTION

Antimicrobials have been used since ancient times. A variety of agents in the environment have been common to eliminate harmful bacteria. These substances include herbs, honey, garlic, ginger, echinacea, goldenseal, clove, and oregano (Torrence and Isaacson, 2003). John Parkinson (1567-1650) was the first person who documented the treatment of infections by use of molds (Gould, 2016). Modern antibiotics such as tetracycline have been detected in human bone excavated in Sudanese Nubia (Bassett et al., 1980). In the twentieth century, while investigating staphylococcus, Alexander Fleming accidentally discovered penicillin (Ligon, 2004, Fleming, 1929). The discovery and early development of penicillin is one of the most significant medical achievements that has saved the lives of millions of people worldwide (Ligon, 2004). Nevertheless, infectious diseases are the underlying causes of death each year with lower respiratory infections ranked as the 4th leading cause in 2019 (WHO, 2021). In 1945, Fleming warned about the dangers of misusing penicillin and the first case of penicillin resistance was reported in 1947 (Barber and Rozwadowska-Dowzenko, 1948).

Antimicrobial resistance poses a threat to human health and presents a major financial burden. Since overuse of antimicrobial drugs promotes resistance in bacteria, antibiotics stewardship strategies are increasingly implemented in efforts to protect patients from harm caused by unnecessary antibiotics use and combat antibiotics resistance (CDC, 2021). In an effectiveness study from China's antimicrobial stewardship team at Shanghai hospital, the relationship between antibiotics use and gram-negative bacteria resistance was evaluated from 2008 to 2013. It was found that a reduction in antibiotics frequency and dosage had limited effects on the reversal of bacteria resistance (Guo et al., 2015).

There are different mechanisms of resistance to antimicrobials, including intrinsic (passive) and acquired (active) resistance. In intrinsic resistance, gram-negative bacteria, such as Pseudomonas aeruginosa have low membrane permeability and high natural resistance against antibiotics (Nakae, 1995). Acquired resistance can occur by changes in bacterial genome obtained through horizontal transfer of resistance genes from strains and species (for review, see Bockstael and Van Aerschot 2009, Todar, 2011). It has been reported that the horizontal transfer of plasmids plays a vital role in the adaptation of bacteria in various environments (Heuer and Smalla 2012; Sobecky and Coombs, 2009).

One of the major classical mechanisms for antibiotics inactivation is the chemical modification of antibiotics by enzymes like penicillinase (β-lactamase) (Abraham and Chain, 1940). β-lactams are a large class of antibiotics, such as penicillin, cephalosporins, carbapenems, and monobactams (De Pascale and Wright, 2010). In order to overcome β-lactamase-mediated resistance, β-lactamase inhibitors have been suggested, including clavulanate, sulbactam, and tazobactam (Drawz, and Bonomo, 2010). For instance, β-lactam antibiotics are ineffective against Mycobacterium tuberculosis. However, it has been reported that using meropenem combined with the β-lactam inhibitor clavulanate led to inhibitory activity against M. tuberculosis (Hugonnet et al., 2009). About 100 years ago, viruses that infect bacteria (bacteriophages) were discovered (Salmond and Fineran, 2015). They have been introduced as another approach to combat antibiotic-resistant bacteria

(Kortright et al., 2019). Phages are highly specific for a bacterial strain and are nontoxic to the patients, but synthetic antibiotics are usually associated with undesired kidney or liver damage (Saha and Mukherjee, 2019). However, data regarding the use of bacteriophages to treat bacterial disease in humans are insufficient and further studies are needed (Principi et al., 2019).

There is an urgent need to find an effective strategy to combat antibiotic resistance. The nature of consciousness and its place in science have received much attention in the current century. Many philosophical and scientific theories have been proposed in this area. In the1980s, Mohammad Ali Taheri introduced novel fields with a non-material/non-energetic nature named Taheri Consciousness Fields (TCFs). In this perspective, T-Consciousness is one of the three existing elements of the universe apart from matter and energy. According to this theory, there are various TCFs with different functions, which are the subcategories of a networked universal internet called the Cosmic Consciousness Network (CCN). The major difference between the theory of TCFs and other theoretical concepts about consciousness is related to the practical application of the TCFs. These fields can be applied to all living and non-living creatures, including plants, animals, microorganisms, materials, etc.

Mohammad Ali Taheri, the founder of Erfan Keyhani Halqeh, a school of thought, introduced a new science in 2020 as a branch of this school. He coined the term Sciencefact for this new science because it utilizes scientific investigations to prove the existence of T-Consciousness as an irrefutable phenomenon and a fact. Although science focuses solely on the study of matter and energy and Sciencefact, by contrast, explores the effects of the [non-material/non-energetic] TCFs, Sciencefact has provided a common ground between the two by conducting reproducible laboratory experiments in various scientific fields, and it has used the scientific approach in proving TCFs.

The influence of the TCFs begins with the Connection between CCN as the Whole Taheri Consciousness of the universe and the subjects of study as a part. This Connection called “Ettesal” is established by a Faradarmangar’s mind (a certified and trained individual who has been entrusted with the TCFs). The human mind has an intermediary role (Announcer) which plays a part by fleeting attention to the subject of study and then the main achievement obtained as a result of the effects of the TCFs. These fields cannot be directly measured by science, but it is possible to investigate their effects on various subjects through reproducible laboratory experiments (Taheri 2013).

The research methodology in the study of T-Consciousness has been founded on the process of *Assumption, Argument, and Proof,* in which the basic Assumption is: The Cosmos was formed by a third element called T-Consciousness that is different from matter and energy.

The Argument: The existence of TCFs can be demonstrated by their effects on matter and energy (e.g., humans, animals, plants, microorganisms, cells, materials, etc.)

The Proof is the scientific verification of the effects of TCFs on matter and energy (according to the Argument) through various reproducible scientific experiments.

Accordingly, to investigate and verify the existence, effects and mechanisms of TCFs, the following five research phases (Phases 0 through 4), and the aims of each phase are outlined below.

Phase-0 studies aim to prove the existence

of TCFs by observing their effects. The nature of T-Consciousness and what it is will not be addressed in this phase. Phase-1 explores the varied effects of different TCFs. Phase-2 examines the reason behind the varied effects of these fields. Phase-3 investigates the mechanism of TCFs effects on matter and energy. Finally, Phase-4 draws significant conclusions, particularly with regard to the *mind and memory of matter* and their relation to the T-Consciousness, etc.

In the previous study of the authors of the present study, the effects of Faradarmani CF on bacterial population growth have been studied (Taheri et al., 2021). The aim of this study was to investigate the effects of Faradarmani CF on bacterial antibiotics resistance characteristics of hospital strains.

MATERIALS AND METHODS

Faradarmani CF Application

TCFs were applied to the subjects of this study according to the protocols mentioned on the website of the TCFs research center (www.cosmointel.com). Obtaining an announcement (Connection to the CCN) is free of charge (in the "Assign An-nouncement" section). In order to study at any time and place, the researchers are asked to

in-troduce the test specifications including the nu m-ber of samples and their assigned names to the guidance center. It should be noted that this study was conducted in a double-blinded way, meaning that the experts were completely unfamiliar with TCFs theory. Also, the person who established the T-Consciousness Connection was unfamiliar with the details of this study.

Disk diffusion methodology

In this study, we investigate the effect of Faradarmani CF treatment on antibiotics resistance in hospital-resistant bacteria isolates, including gram-negative (*Pseudomonas aeruginosa, Kleb-siella pneumoniae*) and gram-positive bacteria (*Staphylococcus aureus*). The zones of inhibition were measured based on CLSI tables (https://clsi.org). In this test, we used antibiotics discs from PADTAN TEB Co. (Tehran, Iran) with concentra-tions listed in Table 1.

Table1. Antibiotics disks and related concentrations used in disk diffusion test.

Antibiotics	*Concentration (µg/Disc)*
Doxycycline (DOX)	30
Streptomycin (STR)	10
Colistin (COL)	10
Ceftriaxone (CTR)	30
Cotrimoxazole (SXT)	25
Ciprofloxacin (CIP)	5
Clindamycin (CLN)	2
Erythromycin (ERI)	15

MIC method

To confirm the effects of Faradarmani CF on antibiotics resistance, we used three hospital bacteria *Pseudomonas aeruginosa, Acinetobacter baumannii,* and *Staphylococcus aureus* as well as one laboratory bacterium Bacillus subtilis. Responses were measured from both systems under Faradarmani CF treatment and non-Faradarmani CF controls.

The antibiotics used for this study include six groups obtained from MAST (UK): Amoxicillin (AMX), Ciprofloxacin (CIP), Ceftazidime (CAZ), Meropenem (MEM), Gentamicin (GEN) and Tetracycline (TE), which were administered by Broth Microdilution at 16 concentrations (From 256 / g / ml to 0.5-256µg/ml). All experiments were performed two times.

RESULTS

The results of the present study are categorized into two sections according to the methodology used to assess microbial resistance and sensitivity.

Disk methodology

The effect of Faradarmani CF on resistant hospital isolates was measured by disk method, as shown in Table 2.

As shown in Table 2, changes in halo size (decrease or increase in antibiotics resistance) range from -0.58% to 12.5%. The Faradarmani CF treatment in 8 cases (4 sensitive and 4 resistant cases to antibiotics) caused a decrease in the halo (increase in resistance). On the other hand, Faradarmani CF treatment in 15 cases (6 sensitive cases to antibiotics and 9 resistant), caused an increase in the diameter of the halos (decrease in resistance). Moreover, in 17 cases (12 cases were resistant to antibiotics and 5 cases were sensitive), there was no change in the diameter of the halo as a result of Faradarmani CF treatment.

Minimum Inhibitory Concentration MIC assay methodology

In order to complete the results of the previous method and increase their accuracy, the effect of Faradarmani CF was measured on resistant hospital isolates measured by MIC as shown in Table 2. This effect was defined as the difference between Faradarmani CF treated responses as compared with non-Faradarmani CF treated controls.

According to the obtained results shown in Table 2, the effect of Faradarmani CF treatment re-

Table 2. Changes (in comparison with control, the decrease is denoted by [-] and increase is denoted by [+]) in halo size as a result of antibiotics treat-ment

	Type	Bactericide				Bacteriostatic			
		COL	CTR	SXT	STR	CIP	ERI	CLN	DOX
p.aeruginosia (1)	Pathogen	0	+4%	+2.3%	-7.10%	-3.7%	+4.7%	+3.7%	+3.2%
p.aeruginosia (2)	Pathogen	+3.48%	-4.5%	+1.5%	+5.55%	+6.6%	0	+4.3%	+4.37%
S.aureus (1)	Human coexist-ence	0	+12.5%	0	-3.6%	0	0	-2.9%	-1.5%
S.aureus (2)	Human coexist-ence	0	-0.7%	0	0	0	0	-0.58%	0
K.pneumonia	Pathogen	+2.5%	0	0	+3.96%	0	0	+10%	0

Abbreviations: Colistin, COL; Ceftriaxone, CTR; Cotrimoxazole, SXT; Streptomycin, STR; Ciprofloxacin, CIP; Erythromycin, ERI; Clindamycin, CLN; Doxycycline, DOX.

Table 3. The MIC of antibiotics in control samples as compared with test strains: MIC of Control- MIC of treatment (% of success: [-] denotes increase in resistance, [+] denotes decrease in resistance)

	TE	GEN	MEM	CAZ	CFM
S. aureus	24-32 (-33%)	16-8 (+50%)	-	-	128-64 (+50%)
S. aureus (MRSA)	64-32 (+50%)	-	32-16 (+50%)	-	-
E. coli	16-8 (+50%)	-	-	24-14 (+42%)	-
B. subtilis	-	-	64-32 (+50%) 2-0.75 (+62.5%)	-	256-128 (+50%)
K. pneumonia	-	-	-	-	16-8 (+50%)
P. aeruginosa	-	32-16 (+50%) 4-3 (+25%)	-	-	-
A. baumannii	-	-	64-32 (+50%)	-	-

Abbreviations: Tetracycline, TE; Gentamicin, GEN; Meropenem, MEM; Ceftazidime, CAZ; Cefixime, CFM.

sults in a decrease in resistance in both gram-negative and gram-positive bacteria. The only instance where we report an increase in resistance as a result of Faradarmani CF treatment is in the case of *S.aureus* strain.

The Faradarmani CF did not have any effect on bacteria under the treatment of ciprofloxacin antibiotics, amoxicillin, and azithromycin. However, the greatest effect of Faradarmani CF was observed in Tetracyclin, Meropenem, Cefixime, and (3 cases) antibiotics treatments.

DISCUSSION

In this study, we examine the influence of Faradarmani CF treatment on different antibiotics resistant bacteria and aim to decipher the mechanisms of drug resistance in different antibiotics (bactericides and bacteriostatic) with two known methods (disk diffusion and MIC). Our results showed both a decrease and an increase in antibiotics resistance characteristics of different bacterial species.

With the MIC analysis, increasing the number of serial dilutions increases the accuracy of measurement in detecting the Faradarmani CF influence on antibiotics resistance. This observation is consistent with the results obtained from disk diffusion analysis. However, we observed different resistance responses in different bacterial populations when using different antibiotics.

Specifically, using both MIC and disk diffusion methodologies, the *P.aeruginosa* strain showed an increase in resistance while *P.aeruginosa, E.coli, B.subtilis, K.pneumoniae, A.bummani*, and *S.aureus* strains showed a decrease in resistance when treated with different antibiotics. These observations point toward variations in resistance response with different strains under different antibiotics treatments. According to Taheri's theory, although Faradarmani CF is neither matter nor energy, and therefore we cannot measure it quantitatively, but it is possible to investigate its effects indirectly through various experiments. In this way, the Faradarmani CF was applied through the mind of the person who *announced* Faradarmani CF to the CCN.

In this study, we observed a change in resistance responses from various bacterial strains with different antibiotics pressures under the influence of Faradarmani CF as compared with non-Faradarmani CF controls. In other words, the behavior of bacteria changed under the influence of Faradarmani and both reduction and increase in antibiotics resistance responses was observed.

This result is independent of the efficacy of antibiotics in the clinic and merely points to the differential response of bacteria in various population strains under Faradarmani CF treatment. The differences in bacterial response in this study confirm the previous investigations and suggest that Faradarmani CF has different functions in various complex systems (Taheri et al., 2021).

The delineation of molecular machinery responsible for such responses is essential to understanding the role of Faradarmani CF in biological systems. In previous studies, the effects of the TCFs on MCF7 cancer cell line (Taheri et al., 2020a), Alzheimer's disease rat models (Taheri et al., 2021), spatial memory and avoidance behavior of a rat model of Alzheimer's disease (Taheri et al.,

2021), Wheat plant under salinity stress (Torabi et al., 2021), Viral growth (Taheri et al., 2020), and the electrical activity of the brain during Faradarmani in the Faradarmangars population (Taheri et al., 2020b) have been investigated. More research needs to be done in identifying the effects of TCFs on different biological systems. The reproducibility of the current experiment is key in understanding the effects of Faradarmani CF on bacterial resistance responses.

ACKNOWLEDGMENTS

The authors would like to acknowledge the Department of Biology, Faculty of Natural Sciences, University of Tabriz, Tabriz, Iran, for providing data acquisition service for this research work.

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antimicrobial resistance due to non-human use.

Effect of Faradarmani Consciousness Field on the susceptibility of *Candida albicans* and *Aspergillus fumigatus* to antifungal drugs

Mohammad Ali Taheri[1], Laleh Amani[2], Ali Zaman Vaziri[3], Hossein Keyvani[4*]

1. Sciencefact R&D Department, Cosmointel Inc. Research Center, Ontario, Canada

2. Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

3. Cancer Biomedical Center (CBC) Research Institute, Tehran, Iran

4. Department of Virology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran

* Corresponding author:

Hossein Keyvani,
Department of Virology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran.

E-mail: Keyvanlab@yahoo.com

**Dr. Laleh Amani was an outstand-ing, compassionate, and enthusiastic researcher in the Cosmointel. Inc studies who passed away in 2021. We extend our sincere condolences and appreciation for her extraordi-nary efforts in this research and pray for her peace.

ABSTRACT

A suitable antifungal therapy for successful patient outcomes is needed for all serious fungal infections. Only a few antifungal agents are available, so the appearance of resistance to a single drug and currently multidrug resistance has critically hampered the management of patients. Faradarmani Consciousness Field (CF) introduced by Taheri is neither energy nor matter and does not have a quantity, so it cannot be directly measured. Nevertheless, it is possible to assess their effects indirectly through controlled experimentations in the laboratory. This study aimed to evaluate the effect of Faradarmani CF on the susceptibility of *Candida albicans* and *Aspergillus fumigatus* to antifungal drugs. For this purpose, antifungal susceptibility was assessed via the disk diffusion method to evaluate the Faradarmani CF effect. Faradarmani CF significantly reduced the resistance of *C. albicans* and *A. fumigatus* to nystatin. As well as reduced, the resistance against amphotericin B was observed in both fungi but compared to the control was not significant. Considering the results, the drug resistance of *C. albicans* and *A. fumigatus* decreased under influence of Faradarmani CF, and it can be examined in fungal infections in vivo. In addition, it is recommended that the effects of Faradarmani CF on other drug-resistant pathogens be investigated.

Keywords: Faradarmani Consciousness Field, Taheri Consciousness Fields, *Candida albicans*, *Aspergillus fumigatus*

INTRODUCTION

The invasive mycoses caused by opportunistic pathogenic fungi such as *Aspergillus fumigatus* and *Candida albicans* have increased considerably over the past three decades (Hajjeh et al., 2004, Seagle et al., 2021). This increase in infections is directly correlated to increase populations of at-risk patients, which leads to serious fungal infections development and excessive morbidity and mortality (Gudlaugsson et al., 2003, Rayens et al., 2021). Serious life-threatening fungal infections have been reported with a growing number of pathogens, such as *C. albicans* and *A. fumigatus*, which are well-known opportunistic pathogens (Pfaller et al., 2004).

Resistance to available three types of antifungal drugs (echinocandin, azoles, and polyenes) can severely restrict treatment options. Drug resistance is particularly concerning for severe infections that may be harder to treat such as invasive fungal infections, which affect the heart, brain, eyes, blood, or other parts of the body (Gupta et al., 2021, Seagle et al., 2021, Fernández-García et al., 2017).

The nature of consciousness and its place in science have received much attention in the current century. Many philosophical and scientific theories have been proposed in this area. In the1980s, Mohammad Ali Taheri introduced novel fields with a non-material/non-energetic nature named Taheri Consciousness Fields (TCFs). In this perspective, T-Consciousness is one of the three existing elements of the universe apart from matter and energy. According to this theory, there are various TCFs with different functions, which are the subcategories of a networked universal internet called the Cosmic Consciousness Network (CCN). The major difference between the theory of TCFs and other theoretical concepts about consciousness is related to the practical application of the TCFs. These fields can be applied to all living and non-living creatures, including plants, animals, microorganisms, materials, etc.

Mohammad Ali Taheri, the founder of Erfan Keyhani Halqeh, a school of thought, introduced a new science in 2020 as a branch of this school. He coined the term Sciencefact for this new science because it utilizes scientific investigations to prove the existence of T-Consciousness as an irrefutable phenomenon and a fact. Although science focuses solely on the study of matter and energy and Sciencefact, by contrast, explores the effects of the [non-material/non-energetic] TCFs, Sciencefact has provided a common ground between the two by conducting reproducible laboratory experiments in various scientific fields, and it has used the scientific approach in proving TCFs.

The influence of the TCFs begins with the Connection between CCN as the Whole Taheri Consciousness of the universe and the subjects of study as a part. This Connection called “Ettesal” is established by a Faradarmangar’s mind (a certified and trained individual who has been entrusted with the TCFs). The human mind has an intermediary role (Announcer) which plays a part by fleeting attention to the subject of study and then the main achievement obtained as a result of the effects of the TCFs. These fields cannot be directly measured by science, but it is possible to investigate their effects on various subjects through reproducible laboratory experiments (Taheri, 2013).

The research methodology in the study of T-Consciousness has been founded on the process of *Assumption, Argument, and Proof*, in which the basic Assumption is: The Cosmos was formed by a third element called T-Consciousness that is dif-

ferent from matter and energy.

The Argument: The existence of TCFs can be demonstrated by their effects on matter and energy (e.g., humans, animals, plants, microorganisms, cells, materials, etc.)

The Proof is the scientific verification of the effects of TCFs on matter and energy (according to the Argument) through various reproducible scientific experiments.

Accordingly, to investigate and verify the existence, effects and mechanisms of TCFs, the following five research phases (Phases 0 through 4), and the aims of each phase are outlined below.

Phase-0 studies aim to prove the existence of TCFs by observing their effects. The nature of T-Consciousness and what it is will not be addressed in this phase. Phase-1 explores the varied effects of different TCFs. Phase-2 examines the reason behind the varied effects of these fields. Phase-3 investigates the mechanism of TCFs effects on matter and energy. Finally, Phase-4 draws significant conclusions, particularly with regard to the *mind and memory of matter* and their relation to the T-Consciousness, etc.

In this study, the effect of Faradarmani CF on the susceptibility and resistance of *C. albicans* and *A. fumigatus* to antifungal drugs amphotericin B and nystatin was investigated.

METHODS AND MATERIALS

Applying the Faradarmani CF

TCFs were applied to the samples according to the protocols regulated by COSMOintel research center (www.COSMOintel.com). A request for Connection to the CCN to utilize TCFs can be placed through the COSMOintel website in the "Assign Announcement" section. This access is available for everyone at no cost. In order to study and experience this Connection, the researchers can register on the website at any time and in order to report the experiment to the COSMOintel research center. Certain details of the experiment must be provided to the center; for example, the characteristics or number and name of samples and controls must be specified. This entire experiment was carried out as a double-blind method where lab technicians were completely unaware of TCFs theory, and the Faradarmangar at the COSMOintel research center who established the Connection was unaware of the details of the study. Double-blind is a gold standard that is common in science experiments in the field of medicine and psychology, involving theoretical and practical testing.

In the present study, Faradarmani CF was announced for the treatment group of disk diffusion method after the culture of fungi and before inserting the disks as the. The Faradarmani CF was only applied for test plates.

Evaluation of the effect of different dilutions of amphotericin B and nystatin

The effects of amphotericin B and nystatin on *C. albicans* and *A. fumigatus* were measured by the disk diffusion method (Fothergill, 2012). In the first stages, the effect of different dilutions of amphotericin B and nystatin on fungi was investigated in several stages and the minimum effect of drugs was calculated. Then, the effect of Faradarmani CF on fungi was measured with the selected concentration of drugs.

C. albicans and *A. fumigatus* were obtained from laboratory archives and were cultured on Sabouraud Dextrose Agar (SDA) medium. It was used from *A. fumigatus* spores and *C. albicans* yeast phase for agar diffusion test. Fungi inoculums con-

Table1. The zone size (mm) of *Aspergillus fumigatus* and *Candida albicans* against nystatin and amphotericin in Faradamani CF treatment and control groups (p<0.05 *)

	Nystatin		Amphotericin B	
	Control	CF treatment	Control	CF treatment
A. fumigatus	16.25±1.7	20.75±2.21*	15.25±2.21	16±1.8
C. albicans	16±0.81	24.75±2.9*	9.75±1.7	11±1.8

tained 1 ×10^6 to 5×10^6 cells/ml (0.5 McFarland densities) and the standard suspension was used for agar diffusion methods (Fothergill, 2012).

Before experimenting, to evaluate the effective concentrations of antibiotics, different dilutions were prepared from amphotericin B (Sigma) and nystatin (Jabraben Hayan). Prepared dilutions of amphotericin B were 200, 20, and 2 mg/mL, as well as 200, 20, and 2 µg/mL for *C. albicans* and *A. fumigatus*, respectively. The dilutions of 10,000, 1000, 100, and 10 units/mL of nystatin were prepared for both fungi. Finally, two concentrations of nystatin, including 10 unit/mL and 100 unit/mL against *C. albicans* and *A. fumigatus* were selected, respectively. As well, two concentrations of amphotericin B including 2mg/mL and 200 µg/mL for *C. albicans* and *A. fumigatus* were selected, respectively. The blank disks were placed in micro-tubes containing different dilutions of the drugs for five minutes and after ensuring that the disks were properly mixed with the evaluated drugs by shaking the micro-tubes for one minute, the disks were placed with three replications on cultured plates. The plates were maintained in an incubator at 37 ° C for 24 hours. The inhibiting zone was measured. The selected amounts according to the appropriate diameter of the zone of each drug to prevent the growth of fungi were determined. Disk diffusion test was performed with disks containing selected concentrations of drugs in treatment groups (Faradarmani CF) and control groups.

STATISTICAL ANALYSIS

The independent t-test was used to calculate the significance of differences between control and treatment groups, and $p< 0.05$ was considered statistically significant.

RESULTS

For evaluation of Faradarmani CF effect on the susceptibility of *C. albicans* and *A. fumigatus* to nystatin and amphotericin, two concentrations of nystatin including 10 unit/mL and 100 unit/mL against *C. albicans* and *A. fumigatus* were selected, respectively. As well as two concentrations of amphotericin B including 2mg/mL and 200 µg/mL for *C. albicans* and *A. fumigatus* were selected, respectively. The results of the disk diffusion test showed the significant effect of Faradarmani CF on the zone size in the plates treated with Faradarmani CF compared to the control plates (untreated with Faradamani CF) in the fungi treated with nystatin. In addition, the increase of the zone size in the plates treated with Faradarmani CF in the fungi treated with amphotericin was observed but was not significant compared to the control (Table 1).

DISCUSSION

The application of antifungal drugs in the treatment of fungal infections can cause antifungal resistance (Revie et al., 2018). Resistance to almost

all antifungal drugs has been described in various pathogens, including *Aspergillus* and *Candida* species (Beardsley et al., 2018). Treatment options for controlling fungal infections are limited and combining multiple drugs to achieve a better therapeutic effect is tempting. In recent years, several new resistance patterns have been observed, including antifungal resistance from environmental sources in *A. fumigatus* and the emergence of simultaneous resistance to different types of antifungals (multidrug resistance) in different *Candida* species (Sanglard, 2016).

Finding a way to treat at-risk patient populations with drug-resistant fungal infections is essential. This study showed the effect of Faradarmani CF on increasing the susceptibility of *C. albicans* and *A. fumigatus* against nystatin significantly.

In previous researches, we observed the effects of the TCFs on MCF7 cancer cell line (Taheri et al., 2020a), Alzheimer's disease rat models (Taheri et al., 2021b), spatial memory, and avoidance behavior of a rat model of Alzheimer's disease (Taheri et al., 2021c), tolerance of *Triticum aestivum* L. under salinity stress (Torabi et al., 2020), bacterial population growth (Taheri et al., 2021d), Vesicular Stomatitis Virus (VSV), Herpes Simplex Virus 1 (HSV1), Encephalomyocarditis Virus (EMCV), and Reovirus (Taheri et al., 2021a), and the electrical activity of the brain during Faradarmani in the Faradarmangars population (Taheri et al., 2020b).

TCFs are not measurable, but it is possible to investigate their effects indirectly through various experiments. We suggest more investigations on other drug-resistant microorganisms to study the effect of the Faradarmani CF on drug resistance.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the use of the laboratory, services, and facilities of the Keyvan Virology Specialty Laboratory (KVSL), Tehran, Iran.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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Effect of the Faradarmani Consciousness Field on the susceptibility of antibiotic-resistant human pathogenic bacteria *Pseudomonas aeruginosa*

Mohammad Ali Taheri[1], Laleh Amani[2], Ahmad Khalili[3], Noushin Nabavi[4], Hossein Keyvani[5*]

1. Sciencefact R&D Department, Cosmointel Inc. Research Center, Ontario, Canada

2. Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

3. Cancer Biomedical Center (CBC) Research Institute, Tehran, Iran

4. Research Services at the University of Victoria, Victoria, British Columbia, Canada.

5. Department of Virology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran

* Corresponding author:

Hossein Keyvani,
Department of Virology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran.

E-mail: Keyvanlab@yahoo.com

**Dr. Laleh Amani was an outstand-ing, compassionate, and enthusiastic researcher in the Cosmointel. Inc studies who passed away in 2021. We extend our sincere condolences and appreciation for her extraordinary efforts in this research and pray for her peace.

ABSTRACT

Faradarmani Consciousness Field is one of the several Taheri Consciousness Fields (TCFs) were introduced by Mohammad Ali Taheri. TCFs do not possess a quantity so we cannot directly measure them. However, it is possible to evaluate their effects indirectly through experimental evidence in the laboratory. The resistance of bacteria to antibiotics is a global challenge because the number of bacterial strains resistant to antibiotics has expanded yearly and has spread worldwide. It seems that novel approaches are needed to solve this problem. In this study, the effect of Faradarmani CF on the susceptibility of antibiotic-resistant *Pseudomonas aeruginosa* as a human bacterial pathogen was evaluated. Antibiotic susceptibility in the presence and absence of Faradarmani CF was assessed via the antimicrobial disk diffusion method. Afterward, it was used from real-time RT-PCR for evaluation of the expression level of the *MexA*, *MexB* , and *OprM* genes of *P. aeruginosa* strain overexpressing the MexAB–OprM efflux pump. According to the results of the disk diffusion test, Faradarmani CF decreased resistance to antibiotics in *P. aeruginosa* significantly ($p<0.05$). The RNA expression level of *MexB* and *OprM* genes was decreased in the Faradarmani treatment group compared with the control group ($p<0.05$). The RNA expression level of *MexA* decreased, but it was not significant ($p>0.05$). We showed that the drug resistance of P. aeruginosa decreased under the influence of Faradarmani CF, and it can be examined in *P. aeruginosa* infections in vivo and in clinical studies. In addition, it is recommended that the effects of T-Consciousness Fields on other drug-resistant pathogens be investigated.

Keywords: Faradarmani, Taheri Consciousness Field, Cosmic Consciousness Network, *Pseudomonas aeruginosa*, Antibiotic-resistant

INTRODUCTION

The bacterial resistance to antibacterial agents is skyrocketing. It is one of the major problems in treating infectious patients and finding a solution to this problem seems vital (Mendelson et al., 2015). The *P. aeruginosa* as an opportunistic pathogen is renowned for its outstanding adaptation to different environments. Diseases related to this bacterium range from mild folliculitis to life-threatening pneumonia and septicemia (Mesaros et al., 2007).

Decreased susceptibility to antibiotics and disinfectants has been extensively reported in clinical isolates, making infection with *P. aeruginosa* difficult to treat (Willcox 2011, Abidi et al., 2013, Mohammadinia et al., 2012).

The nature of consciousness and its place in science have received much attention in the current century. Many philosophical and scientific theories have been proposed in this area. In the1980s, Mohammad Ali Taheri introduced novel fields with a non-material/non-energetic nature named Taheri Consciousness Fields (TCFs). In this perspective, T-Consciousness is one of the three existing elements of the universe apart from matter and energy. According to this theory, there are various TCFs with different functions, which are the subcategories of a networked universal internet called the Cosmic Consciousness Network (CCN). The major difference between the theory of TCFs and other theoretical concepts about consciousness is related to the practical application of the TCFs. These fields can apply to all living and non-living creatures, including plants, animals, microorganisms, materials, etc.

Mohammad Ali Taheri, the founder of Erfan Keyhani Halqeh, a school of thought, introduced a new science in 2020 as a branch of this school. He coined the term Sciencefact for this new science because it utilizes scientific investigations to prove the existence of T-Consciousness as an irrefutable phenomenon and a fact. Although science focuses solely on the study of matter and energy and Sciencefact, by contrast, explores the effects of the [non-material/non-energetic] TCFs, Sciencefact has provided a common ground between the two by conducting reproducible laboratory experiments in various scientific fields, and it has used the scientific approach in proving TCFs.

The influence of the TCFs begins with the Connection between CCN as the Whole Taheri Consciousness of the universe and the subjects of study as a part. This Connection called "Ettesal" is established by a Faradarmangar's mind (a certified and trained individual who has been entrusted with the TCFs). The human mind has an intermediary role (Announcer) which plays a part by fleeting attention to the subject of study and then the main achievement obtained as a result of the effects of the TCFs. These fields cannot be directly measured by science, but it is possible to investigate their effects on various subjects through reproducible laboratory experiments (Taheri, 2013).

The research methodology in the study of T-Consciousness has been founded on the process of *Assumption, Argument, and Proof*, in which the basic Assumption is: The Cosmos was formed by a third element called T-Consciousness that is different from matter and energy.

The Argument: The existence of TCFs can be demonstrated by its effects on matter and energy (e.g., humans, animals, plants, microorganisms, cells, materials, etc.)

The Proof: is the scientific verification of the effects of TCFs on matter and energy (according to the Argument) through various reproducible sci-

entific experiments.

Accordingly, to investigate and verify the existence, effects and mechanisms of TCFs, the following five research phases (Phases 0 through 4), and the aims of each phase are outlined below.

Phase-0 studies aim to prove the existence of TCFs by observing their effects. The nature of T-Consciousness and what it is will not be addressed in this phase. Phase-1 explores the varied effects of different TCFs. Phase-2 examines the reason behind the varied effects of these fields. Phase-3 investigates the mechanism of TCFs effects on matter and energy. Finally, Phase-4 draws significant conclusions, particularly with regard to the *mind and memory of matter* and their relation to the T-Consciousness, etc.

To date, no study has been performed to investigate the effect of TCFs on drug-resistant bacteria. In order to investigate the evidence of TCFs, antimicrobial susceptibility and antibiotic resistance of human pathogenic bacteria *P. aeruginosa* was studied under the effect of Faradarmani CF. The bacteria were monitored for susceptibility to antibiotics via disk diffusion test and evaluation of expression of resistance-related genes.

MATERIALS AND METHODS

Application of Faradarmani CF

TCFs were applied to the samples according to the protocols regulated by COSMOintel research center (www.COSMOintel.com). A request for Connection to the CCN to utilize TCFs can be placed through the COSMOintel website in the "Assign Announcement" section. This access is available for everyone at no cost. In order to study and experience this Connection, the researchers can register on the website at any time and in order to report the experiment to the COSMOintel research center. Certain details of the experiment must be provided to the center; for example, the characteristics or number and name of samples and controls must be specified. This entire experiment was carried out as a double-blind method where lab technicians were completely unaware of TCFs theory, and the Faradarmangar at the COSMOintel research center who established the Connection was unaware of the details of the study. Double-blind is a gold standard that is common in science experiments in the field of medicine and psychology, involving theoretical and practical testing.

In the present study, Faradarmani CF was *announced* for cultured bacteria in plates for the disk diffusion method as the treatment group. The Faradarmani CF was only applied after the culture of bacteria and before inserting the disks for test plates.

Preparation of bacteria and disk diffusion test

The *P. aeruginosa* was prepared from the laboratory archive (strains had previously been isolated and biochemically diagnosed) and cultured on blood agar (BA) and nutrient agar (NA) mediums.

Two antibiotics, including penicillin and ampicillin against the resistant strain of *P. aeruginosa* (with up to 70 - 80% resistance rate), were selected. The disk diffusion method was performed by CLSI (Clinical and Laboratory Standards Institute) standards. The effect of penicillin (10 unit/disk) and ampicillin disks (10 µg/disk) on bacteria were assessed by evaluating three replications of commercial antibiotic disks (Padtan Teb Company). The disk without antibiotics was used as the negative control. *P. aeruginosa* was cultured uniformly on the surface of BA media using a sterile swab.

The Faradarmani CF was only applied after the culture of bacteria and before inserting the disks for test plates. Then, the disks were placed at a distance of at least two cm from each other with slight pressure. The cultured Petri dishes were then incubated at 37 °C, and the diameter of the growth inhibition zone of bacteria was measured after 24 hours. The bacteria were cultured in an NA medium to repeat the results of the BA medium.

Real-time RT PCR

Real-time RT PCR was performed from bacteria cultured in the BA medium. RNA extraction of CF treatment and control groups of bacteria was performed using RNX-plus reagent kit according to manufacture protocol and to ensure the accuracy of the extraction, quantitative evaluation was performed via Nanodrop (Thermo Scientific, USA) and the 1% agarose gel electrophoresis. The cDNA synthesis was performed according to kit (Takara, Korea) protocol and using the random hexamer.

Evaluation of gene expression by Real-time PCR was performed with Takara Kit (a Korean company) to quantitatively evaluate gene expression using an amplification curve (CT value). The target genes of real-time, *MexA, MexB*, and *OprM* were related to MexAB-OprM efflux pump in *P. aeruginosa*. The expression level of genes was normalized against the *rpoD* as a housekeeping gene. The expression levels of mRNAs were calculated using the comparative ΔCt method. The standard strain of *P. aeruginosa* PAO1 (ATCC 27853) was used as the positive control of the reaction. The microtube containing all the reaction material except cDNA was used as the negative control. It was used the following primers: *MexA*; 5′- CGACCAGGCCGTGAGCAAGCAGC -3′, 5′- GGAGACCTTCGCCGCGTTGTCGC-3′, MexB; 5′- TGTCGAAGTTTTTCATTGAG-3′, 5′- AAGGTCACGGTGATGGT-3′, *OprM*; 5′-GATCCCCGACTACCAGCGCCCCG-3′, 5′- ATGCGGTACTGCGCCCGGAAGGC-3′ and *rpoD* (housekeeping gene); 5′- GGGCTGTCTCGAATACGTTGA-3′, 5′-ACCTGCCGGAGGATATTTCC-3′.

Real-time PCR was performed via the SYBR Green-based PCR Master Mix and analyzed on a Corbett 6000 Rotor-Gene thermocycler (Corbett Research) under the following procedure: one denaturation cycle of 95ºC for 5 min, followed by 40 amplification cycles of 95ºC for 30 sec, annealing temperature for each gene for 30 sec, 72ºC for 30 sec and a final extension of 72˚C for 5 min. The melting curve analysis was performed to assess the lacking primer dimers and amplification specificity.

STATISTICAL ANALYSIS

In the results of the disk diffusion test, the size of the zones was measured and then the mean ± standard deviation (SD) was examined. The Kruskal-Wallis test for nonparametric data and SPSS 18 software were used to analyze the results. The $p< 0.05$ was considered statistically significant.

RESULTS

The figures from the disk diffusion test of antibiotic-resistant *P. aeruginosa* against ampicillin and penicillin disks in each group of the present study are shown in Figure 1 and Table 1.

Faradarmani CF significantly decreased the resistance of *P. aeruginosa* to both penicillin and ampicillin ($p<0.05$) (Table 1 and Figure 1B), and no inhibition zone was observed around the penicillin and ampicillin disks in the control plate

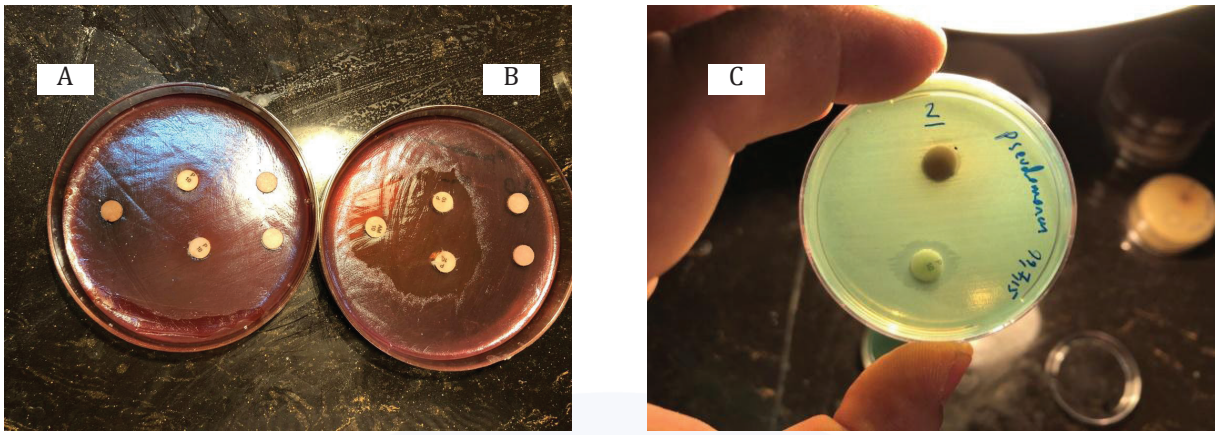

Figure1. The disk diffusion test results of *P. aeruginosa* resistant strain with penicillin, ampicillin disks and disks without antibiotic as the negative control. A) Growth of *P. aeruginosa* resistant strain around the antibiotic disks (penicillin and ampicillin) in BA medium and absence of Faradarmani CF, B) Growth inhibition zone of *P. aeruginosa* resistant strain around the antibiotic disks (penicillin and ampicillin) in the presence of Faradarmani CF in BA medium. C) Repetition of BA medium of the Faradarmani CF treatment group in NA medium.

Table1. The inhibition zone (mm) of disk diffusion test on BA medium of *Pseudomonas aeruginosa*

	Control		Faradarmani treatment	
Antibiotics	Ampicillin	Penicillin	Ampicillin	penicillin
P. aeruginosa	0	0	18±1.6*	20.75±1.5*

An asterisk (*) displays a significant difference compared with control (p<0.05)

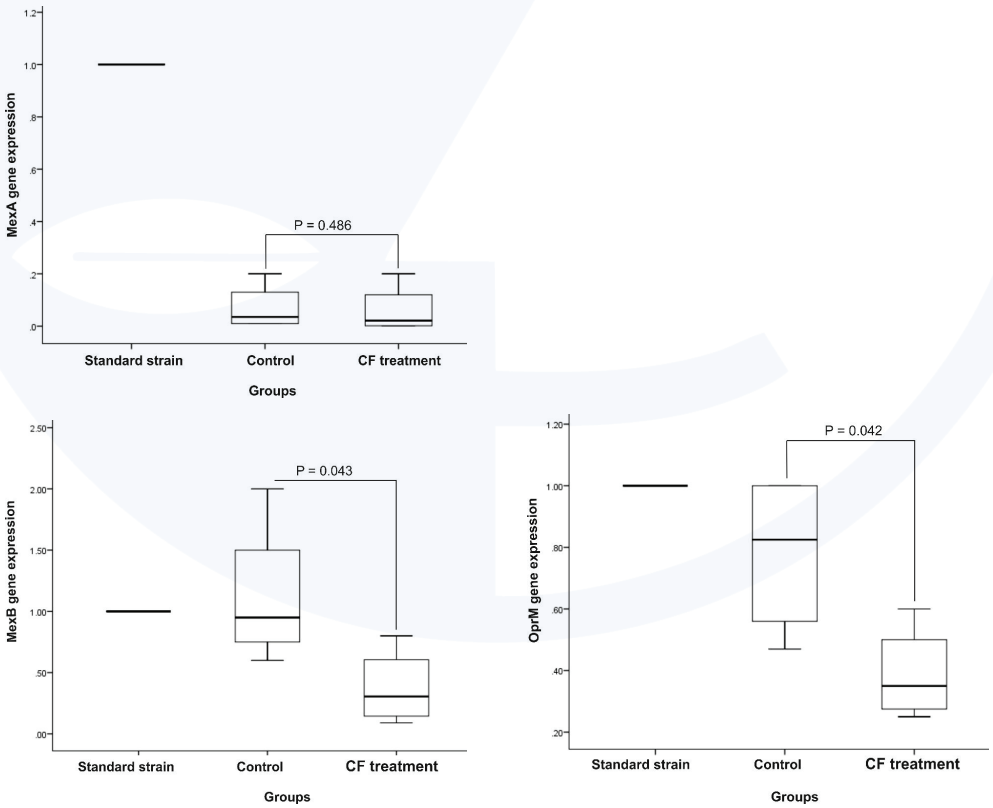

Figure2. RNA expression level of *MexA* (b), *MexB* (b), and *OprM* (c) genes in the control and Faradarmani treatment and standard strain of *P. aeruginosa* PAO1 as the positive control. An asterisk displays a significant difference (p < 0.05) between the Faradarmani CF treatment and control groups.

(Figure1 A). Disk diffusion test from bacteria of Faradarmani treated blood agar on nutrient agar, which was performed for penicillin, showed the persistence of this effect (Figure 1C).

Results of real-time RT-PCR showed a significant decrease in the RNA expression level of *MexB* and *OprM* genes in *P. aeruginosa* in the presence of the Faradarmani CF compare with the control ($p<0.05$). As well as the RNA expression level of MexA in the presence of the Faradarmani CF decreased but it was not statistically significant ($p>0.05$) (Figure 2).

DISCUSSION

The incidence of drug-resistant infections is increasing in hospitals and other clinical care settings. Infections caused by these drug-resistant organisms are difficult to treat, involve challenges in diagnosis and treatment and cause increased morbidity and mortality (Boucher et al., 2009). Finding a way to treat patients with drug-resistant infections is crucial.

In this study, the effect of Faradarmani CF on the susceptibility of an antibiotic-resistant strain of *P. aeruginosa* was evaluated. It was found that Faradarmani CF increased the antibiotics susceptibility to penicillin and ampicillin in phenotypic and genotypic tests.

In the previous researches, we observed the effects of the TCFs on MCF7 cancer cell line (Taheri et al., 2020a), Alzheimer's disease rat models (Taheri et al., 2021b), spatial memory and avoidance behavior of a rat model of Alzheimer's disease (Taheri et al., 2021c), tolerance of *Triticum aestivum* L. under salinity stress (Torabi et al., 2020), bacterial population growth (Taheri et al., 2021d), Reovirus, Encephalomyocarditis Virus, Herpes Simplex Virus 1, and Vesicular Stomatitis Virus (Taheri et al., 2021a), and the electrical activity of the brain during Faradarmani in the Faradarmangars population (Taheri et al., 2020b). As it was mentioned, TCFs are not measurable, but it is possible to investigate their effects indirectly through various experiments. We suggest more susceptibility analyses of other drug-resistant microorganisms to study the effect of the Faradarmani CF on drug resistance.

ACKNOWLEDGEMENTS

The authors thankfully acknowledge the use of the laboratory, services, and facilities of the Keyvan Virology Specialty Laboratory (KVSL), Tehran, Iran.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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Evaluation of the Influence of Faradarmani Consciousness Field on Viral Growth

Mohammad Ali Taheri[1], Mohammad Reza Etemadi[2], Sara Torabi[3], Noushin Nabavi[4], Farid Semsarha[*5]

1. Sciencefact R&D Department, Cosmointel Inc. Research Center, Ontario, Canada

2. Department of Biology, Faculty of Basic Sciences, Islamic Azad University of Arak, Arak, Iran

3. Department of Plant Biology, School of Biology, College of Sciences, University of Tehran, Tehran, Iran

4. Research Services at University of Victoria, BC, Canada

5. Institute of Biochemistry and Biophysics (IBB), University of Tehran, Tehran, Iran

* Corresponding author:

Farid Semsarha
Ph.D., Institute of Biochemistry and Biophysics (IBB), University of Tehran, P.O. Box: 13145-1384, Tehran, Iran.

E-mail: Semsarha@alumni.ut.ac.ir

ABSTRACT

Taheri Consciousness Fields are non-material and non-energetic Fields with the ability to have reproducible effects in laboratory and experimental environments. Previous studies related to studying the effects of Faradarmani Consciousness Field (CF) on plant characteristics and animal disease models reveal that Faradarmani CF functions in optimizing the system under study. Significant effects of Faradarmani CF on bacterial and cellular population growth led us to investigate the effect of Faradarmani CF on viral titer. For this, we stratified various viruses into enveloped or non-enveloped as well as DNA and RNA types. This study aims at assessing the influence of Faradarmani CF on four types of virus combinations using the TCID50 assay. We tested the effect of Faradarmani CF on pre-determined titers of selected viruses and found that Faradarmani CF changed the viral titers by 0.4 to 1.85 logs compared to the control group. As the results suggest, the physical structure of the viruses and their genome type have notable effects on their response to Faradarmani CF.

Keywords: Cytopathic effects, Faradarmani Consciousness Field, Taheri Consciousness Fields, TCID50, Viral quantification

INTRODUCTION

The virus was discovered at the end of the 19th century by Dmitri Ivanovsky. Specifically, the tobacco mosaic virus was the first pathogen identified as a virus and with it, many fundamental virology concepts were developed related to viral purification (Zaitlin, 1998). Viruses are too small and cannot pass through filters that bacteria can (Van Regenmortel, 2008). In the late 1930s, with the invention of the electron microscope, the biological study of viruses, and in particular, bacteriophages, became possible (Luria et al., 1943). Viral genomes consist of DNA or RNA only, and not both simultaneously. DNA or RNA contribute to diverse characteristics in viruses. They can be double-stranded or single-stranded, linear, or circular, and range from 2 kb to 2500 kb in length (O'Carroll and Rein, 2016). The protein shell, known as the capsid, protects the nucleic acid (Pal, 2019). Viruses come in various shapes and sizes and are classified based on morphological features, for example, based on the kind of nucleic acid, capsid symmetry, presence or absence of envelope, and additional characteristics of the capsid (Norrby, 1983).

Viruses exist wherever life is found, and they are the most abundant biological entities (Suttle, 2005, Louten, 2016). It has been reported that there are 10^{31} viruses on Earth. They can infect all types of life forms, including animals, plants, bacteria, and archaea (Koonin et al., 2006; ; Mushegian, 2020). Viruses are not considered being alive because they can only replicate inside host cells (López-García, 2012) and as such are described as 'organisms at the edge of life' (Rybicki, 1990). Recently, it has been reported that whether or not 'viruses are alive' de-pends on the definition of life. For instance, al co-hol-based hand sanitizers kill viruses, so they are clearly not dead, as one cannot kill something that is not alive (Koonin and Starokadomskyy, 2016). Similarly, Pearson (2008) suggests the term 'virophage' for viruses as living beings.

Within the last four decades, we have witnessed various viral pandemics like HIV, SARS-CoV, influenza A (A/H1N1), MERS-CoV, Ebola virus, SARS-CoV-2 and finally the Coronavirus Disease 2019 or COVID-19 as novel challenges (Roychoudhury et al., 2020). Scientists put a significant effort into understanding how to prevent pandemics. According to the CDC, apart from getting vaccinated and taking medicine, nonpharmaceutical interventions (NPIs) are the strategies that people, and communities can take to help slow the spread of respiratory viruses like influenza (e.g., staying home when ill, washing hands) especially when vaccines are not yet available.

Despite prevention efforts, pandemics appear to be increasing, particularly because of the increasing emergence of viral diseases that jump to humans from animals (Madhav et al, 2017).

The nature of consciousness and its place in science has received much attention in the current century. Many philosophical and scientific theories have been proposed in this area. In the1980s, Mohammad Ali Taheri introduced novel fields with a non-material/non-energetic nature named Taheri Consciousness Fields (TCFs). In this perspective, T-Consciousness is one of the three existing elements of the universe apart from matter and energy. According to this theory, there are various TCFs with different functions, which are the subcategories of a networked universal internet called the Cosmic Consciousness Network (CCN). The major difference between the theory of TCFs and other theoretical concepts about consciousness is related to the practical application of the TCFs. These

fields can apply to all living and non-living creatures, including plants, animals, microorganisms, materials, etc.

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The Argument: The existence of TCFs can be demonstrated by their effects on matter and energy (e.g., humans, animals, plants, microorganisms, cells, materials, etc.)

The Proof is the scientific verification of the effects of TCFs on matter and energy (according to the Argument) through various reproducible scientific experiments.

Accordingly, to investigate and verify the existence, effects, and mechanisms of TCFs, the following five research phases (Phases 0 through 4), and the aims of each phase are outlined below.

Phase-0 studies aim to prove the existence of TCFs by observing their effects. The nature of T-Consciousness and what it is will not be addressed in this phase. Phase-1 explores the varied effects of different TCFs. Phase-2 examines the reason behind the varied effects of these fields. Phase-3 investigates the mechanism of TCFs effects on matter and energy. Finally, Phase-4 draws significant conclusions, particularly with regard to the *mind and memory of matter* and their relation to the T-Consciousness, etc.

In previous research, we observed that Faradarmani CF reduced the growth rate of various types of bacteria; in addition, we saw that Faradarmani CF treatment increased the survival of a larger and healthier population (Taheri et al., 2021a). Further details about the theory of TCFs are discussed in recent articles (Taheri et al, 2020a). In this way, it has been reported that Faradarmani CF alleviated the adverse effects of salt stress on wheat plants (Torabi et al., 2020). Other observations that have used this method include the effects of Faradarmani CF in changing cancer cell growth patterns (Taheri et al., 2020b), behaviors and biochemical alterations of Alzheimer's disease rat models (Taheri et al., 2021b), and the electrical activities of the brain (Taheri, et al.,

2020c). In order to investigate these concepts in other organisms, we designed an *in vitro* model to evaluate the effect of Faradarmani CF on the growth characteristics of a panel of viruses with different morphogenetic properties.

MATERIALS AND METHODS

In this study, we investigated the influence of Faradarmani CF on the titer of representative viruses in four categories: (1) prototype viruses, (2) permissive cells for specific virus, (3) exposure of the cells infected with specific viruses to Faradarmani CF and (4) calculation of virus titers using 50% tissue culture infectious dose (TCID50).

Virus selection

Viruses are mainly divided into two major groups of enveloped and non-enveloped entities. We chose prototype viruses from these two categories and investigated the role of Faradarmani CF on them. Enveloped viruses used in our study include Vesicular Stomatitis Virus (VSV) and Herpes Simplex Virus 1 (HSV1) and non-enveloped viruses include Encephalomyocarditis Virus (EMCV) and Reovirus. The properties of the selected viruses are summarized in Table 1.

Faradarmani CF application

TCFs were applied to the subjects of this study according to the protocols mentioned on the website of the TCFs research center (www.cosmointel.com). Obtaining an announcement (Connection to the CCN) is free of charge (in the "Assign Announcement" section). In order to study at any time and place, the researchers are asked to introduce the test specifications including the number of samples and their assigned names to the guidance center. It should be noted that this study was conducted in a double-blinded way, meaning that the experts were completely unfamiliar with TCFs theory. Also, the person who established the T-Consciousness Connection was unfamiliar with the details of this study.

In this study, the Faradarmani CF treatment was assigned to the viruses, every hour during 72 hours of the study, from exposure to the host cell to proliferation in it.

CALCULATION OF VIRUS TITERS USING TCID50

Titering of selected virus stocks

The titering of stocks of viruses was calculated using the Reed and Muench method (Reed and

Table1. Model viruses used in the present study.

Virus	Family	Genome type	Genome size / (kb)	Structure	Weight (MDa)	Size (nm)	Host	Reference
VSV	Rhabdoviridae	(Negative) Single strand RNA	11	Enveloped	265.5	70	Animal	Rodriguez et al 2002
EMCV	Picornaviridae	(Positive) Single-strand RNA	7.8	Non-enveloped	8.6	30	Animal	King et al 2011
HSV1	Herpesviridae	Double strand DNA	152	Enveloped	200	125	Human	William et al 1965
Reovirus	Reoviridae	Double strand RNA	18.2-30.5	Non-enveloped	130	80	Human	MacLachlan and Dubovi 2017

Munech 1938). The method of Reed and Muench is widely used to calculate the 50% endpoint. By accumulating the infected and non-infected test units over the whole dilution range, the effective test population is enlarged beyond the actual number of test units on either side of the 50% endpoint.

Titer of selected viruses exposed to Faradarmani CF

The permissive cells were cultured in 96-well plates at 90-100% confluency. Vero cells were inoculated with VSV and HSV1 whereas EMCV and Reovirus were used to inoculate the L929 cell line. The selected viruses were inoculated under the influence of Faradarmani CF. Ten-fold dilutions from the selected viruses were prepared using DMEM followed by infection of the permissive cells at 37 °C for 1 hour, enough time for viruses to be adsorbed to the cells. Second plates were incubated with the same selected viruses as positive control and were placed on a different level inside the same CO_2 incubator. Faradarmani CF was started at the time of virus inoculation of the host cells up to 72 hours post-infection (hpi). The plates were incubated up to 72 hours post-infection (hpi) at 37 °C in a CO2 incubator. Subsequently, the cells were stained with Giemsa dye controlled by inverted light microscopy (Labomed TCM400) for cytopathic effect (CPE). The TCID50 of the viruses was calculated by the method of Reed and Muench with the formula below:

proportionate distance (PD) = ((% above 50%) - 50%)) / ((% above 50%) - (% below 50%))

log TCID50= (log dilution above 50%) + (PD x log dilution factor)

RESULTS

Virus titer:

Virus titers in the plates inoculated with the selected viruses treated with Faradarmani CF were calculated and compared with the inoculated plates with the virus types without Faradarmani CF treatment as a positive control at 72 hours post-infection. The development of the CPE was observed using an inverted microscope. Representative results of the CPE induction in both Faradarmani CF treated cells, as well as control cells, are depicted in Figure 1. The EMCV plates stained with Giemsa dye are presented in Figure 2 as a representative and used to calculate virus titer.

As reported in Table 2, the change in viral titers for the selected viruses was different in Faradarmani CF compared to control. We observe a decrease from 0.4 to 1.85 in log difference for all RNA viruses in the present study, and a slight increase of about 0.5 log difference for Hsv1, the only DNA virus in the present study.

Table2. TCID50 of the selected viruses of the present study.

Virus	Permissive cell	Virus titer in the control sample (TCID50/ml)	Virus titer in Faradarmani CF treated sample (TCID50/ml)	Log Difference -: decrease +:increase
VSV	Vero	10^{8}	10^{7}	-1
EMCV	L929	10^{9}	$10^{7.15}$	-1.85
Hsv1	Vero	$10^{4.4}$	$10^{4.9}$	+0.5
Reovirus	L929	$10^{9.9}$	$10^{9.5}$	-0.4

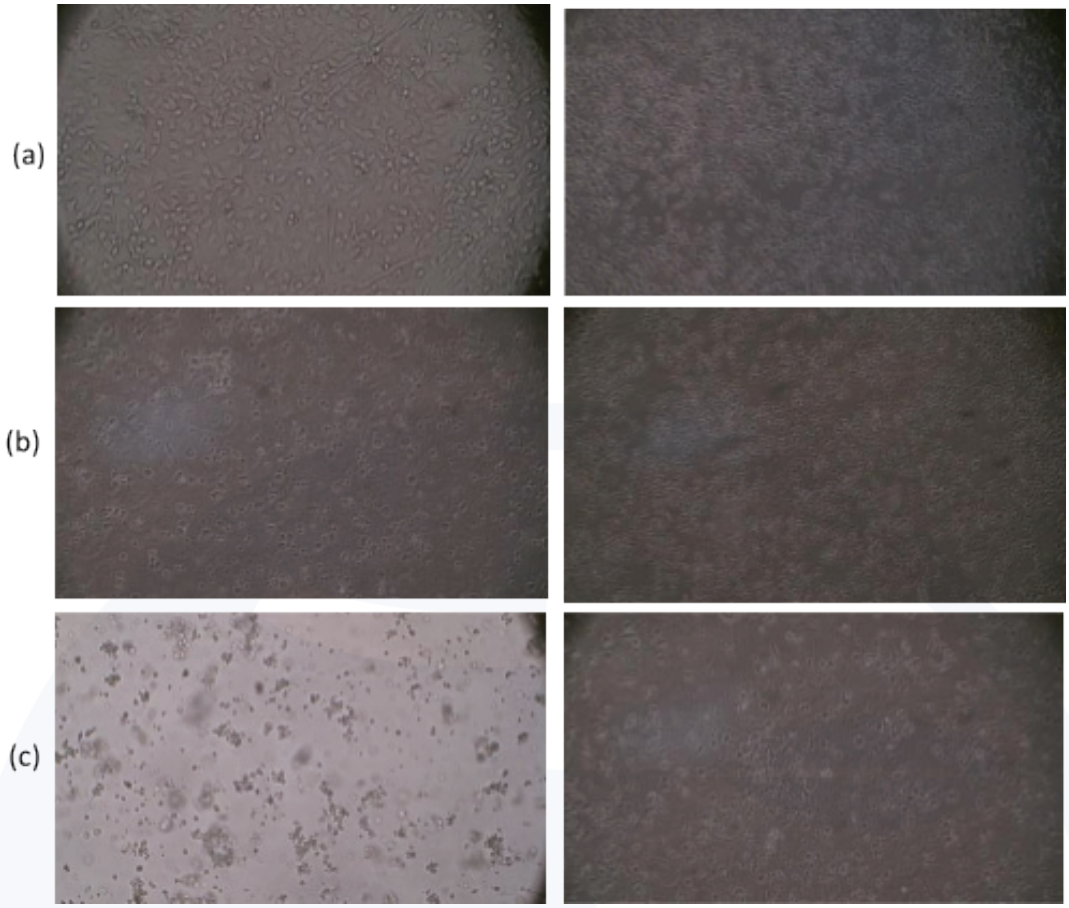

Figure1. Vero (Left) and L929 (Right) cell (a) before VSV/EMCV titration, (b) CPE induction in control without Faradarmani CF treatment, and (c) cells infected with VSV/EMCV with Faradarmani CF treatment. The images present original magnification x40

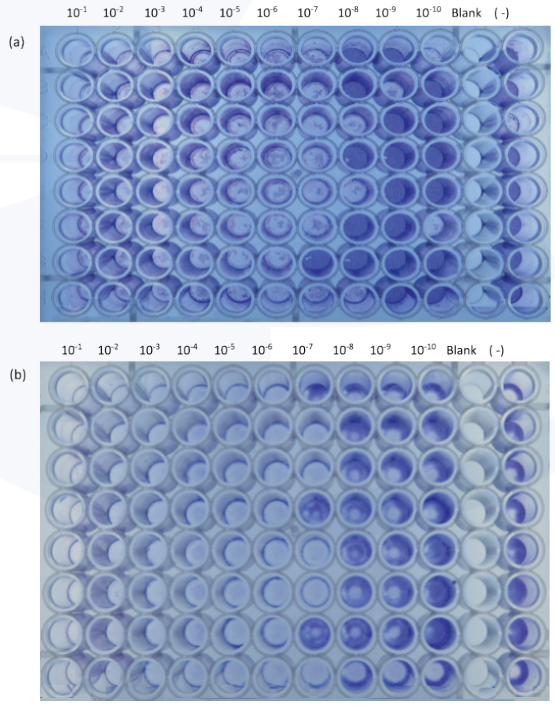

Figure2. 96-well plate used for titration of EMCV as (a) positive control and (b) treated with Faradarmani CF. The infected cells are not stained with Giemsa dye. Serial dilutions from the virus are indicated from left to right for each plate. The first column in the right is used as negative control (mock-infected). The number of infected wells is reducing with increasing dilution from left to right.

DISCUSSION

In this preliminary study, we investigated the role of Faradarmani CF on four viral types for the first time. We observed that the RNA virus titers were significantly decreased under Faradarmani CF treatments. The presence of envelopes in RNA viruses as well as the size of their genome can seemingly affect their response to Faradarmani CF (as shown in comparisons between EMCF and VSV).

The DNA and RNA viruses respond differently to Faradarmani CF, as shown in the Hsv1 results, which are different from the other RNA viruses used in this study. This response may be due to the fact that the DNA viruses (Hsv1) employ a different mechanism for survival and replication in the host cell.

According to Taheri, Faradarmani CF is effective in repairing and modifying the system under study in order to achieve its optimal conditions; changes that occur in the software or the infrastructure of the system under study. In contrast to the impact of Consciousness Fields, the conventional methods of intervention in the systems under study are considered "hardware intervention". An example of this intervention type, in the context of the present study, is the death or inactivation of the microbes under influence of antimicrobial substances. However, what is observed in this study is changes (decrease and increase) in the viral population that indicate exposure to a different factor from known antimicrobial agents.

In summary, we show that firstly Faradarmani CF exerts an effect on virus titers and secondly, Faradarmani CF changes viral counts in concordance with the types. That is, the virus titers are different in enveloped or non-enveloped viruses or in RNA versus DNA viruses. Based on the preliminary results in this study, we recommend further investigations to decipher the underlying mechanisms of viral structure and function as well as their interactions with respective host cells under Faradarmani CF. Viruses are ideal models to delineate the role of FCF both prior to entry in living host cells and after entry.

ACKNOWLEDGMENTS

The authors would like to acknowledge the Livogen Pharmed Co., Tehran, Iran, for providing data acquisition service for this research work.

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Effect of Faradarmani Consciousness Field on immune response induced by an inactivated vaccine against Foot and Mouth disease virus (FMDV) in rats and replication of FMDV *in vitro*

Mohammad Ali Taheri[1], Laleh Amani[2], Ahmad Khalili[3], Ali Zaman Vaziri[3], Hossein Keyvani[4*]

1. Sciencefact R&D Department, Cosmointel Inc. Research Center, Ontario, Canada

2. Department of Biology, Science and Research Branch, Islamic Azad University, Tehran, Iran.

3. Cancer Biomedical Center (CBC) Research Institute, Tehran, Iran

4. Department of Virology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran

** Corresponding author:*

Hossein Keyvani,
Department of Virology, Faculty of Medicine, Iran University of Medical Sciences, Tehran, Iran.

E-mail: Keyvanlab@yahoo.com

***Dr. Laleh Amani was an outstand-ing, compassionate, and enthusiastic researcher in the Cosmointel. Inc studies who passed away in 2021. We extend our sincere condolences and appreciation for her extraordi-nary efforts in this research and pray for her peace.*

ABSTRACT

Foot-and-mouth disease (FMD) is one of the highest risk factors affecting the animal industry throughout the world. Currently, available commercial FMD vaccines have numerous limitations, such as slow induction and short-term maintenance of antibody titers. Therefore, a novel approach is needed that can induce high neutralizing antibody titers to protect the host in the early stages of FMD virus (FMDV) infection and maintain high antibody titers for long periods after one vaccination dose. There are several T-Consciousness Fields (TCFs), introduced by Mohammad Ali Taheri. TCFs are not matter or energy so they cannot be measured directly. However, we can evaluate their effects indirectly through several reproduc-ible experiments in the laboratory. The present study aimed to evaluate the effect of Faradarmani CF as a type of the TCFs on FMDV replication, titer, and RNA copy number as well as the humoral immune response against two types of inactivated FMDV vaccines with different adjuvants in rats.
Two types of FMD vaccines with different adjuvants (Freund and Alum) were prepared, and then 30 male Wistar rats were immunized with vaccines. Rats were divided into 6 groups (n=5 per group). Four groups of rats were studied using the different combinations of treatments and two groups served as positive and negative controls. Vaccination intervals were every 14 days three times. Serum neutralization test (SN) and Enzyme-linked immunosorbent assay (ELISA) were used to assess changes in antibody levels in the serum samples of rats after each immunization. The results showed that Faradarmani CF induced the replication of the vi-rus in vitro. In addition, antibody levels in treated groups under both Freund adjuvant and Alum adjuvant vaccines increased significantly compared to groups without Faradarmani CF treatment. In conclusion, our data suggest that Faradarmani CF may provide an effective approach to increase the success of immunization and vaccination against FMDV serotype O. It is recommended that the effects of TCFs on different types of vaccines be investigated.

Keywords: FMDV, Faradarmani Consciousness Field, Taheri Consciousness Fields, Vaccine

INTRODUCTION

One of the highly contagious viral diseases is Foot-and-mouth disease (FMD), which can affect cloven-hoofed livestock and cause vast financial losses in the industry of livestock due to its severe decrease in productivity of animals, rapid transmission, and high mortality in newborn animals caused by myocarditis (Grubman et al., 2004). This disease is associated with a high fever and causes the formation of vesicles on the mouth, tongue, nose, snout, hooves, teats, and other hairless parts of the animal skin (Arzt et al., 2011).

Foot-and-mouth disease virus (FMDV) is the etiological agent of FMD, which is a single-stranded, positive-sense RNA virus belonging to the Aphthovirus genus of the Picornaviridae family. There are seven distinct serotypes (A, O, C, Asia1, SAT1, SAT2, and SAT3) of this virus (Robinson et al., 2016). The most prevalent serotype of FMDV is serotype O, which circulates in several parts of the world (Klein, 2009).

FMDV serotypes have a high degree of antigenic and genetic variations, so antibody production stimulated by one serotype cannot be effective against different serotypes, and vaccination does not provide cross-protection (Yang et al., 2008, Knowles et al., 2003). Therefore, vaccine strains for each type should be prepared and utilized for protection against each serotype and topotype. Furthermore, vaccines should be continuously injected to maintain antibody titer potency. Nevertheless, these approaches are time-consuming, and the efficacy of these vaccines remains unclear.

While vaccination policy has been applied for the prevention and treatment of FMD, there are numerous limitations of FMD vaccines available in the market (Lyons et al., 2019, de Los Santos et al., 2018, Mahapatra et al., 2018). Some of the limitations are included; the need for repeated and regular vaccination, the requirement for a long time for the establishment of a protective level of vaccine-mediated antibodies, low and short-lived antibody titers, and inadequate host protection with only humoral immune response.

Therefore, innovative methods for use in FMD vaccines are needed to overcome the current limitations of FMD vaccines and increase their efficacy (Lee et al., 2020).

The nature of consciousness and its place in science have received much attention in the current century. Many philosophical and scientific theories have been proposed in this area. In the1980s, Mohammad Ali Taheri introduced novel fields with a non-material/non-energetic nature named Taheri Consciousness Fields (TCFs). In this perspective, T-Consciousness is one of the three existing elements of the universe apart from matter and energy. According to this theory, there are various TCFs with different functions, which are the subcategories of a networked universal internet called the Cosmic Consciousness Network (CCN). The major difference between the theory of TCFs and other theoretical concepts about consciousness is related to the practical application of the TCFs. These fields can be applied to all living and non-living creatures, including plants, animals, microorganisms, materials, etc.

Mohammad Ali Taheri, the founder of Erfan Keyhani Halqeh, a school of thought, introduced a new science in 2020 as a branch of this school. He coined the term Sciencefact for this new science because it utilizes scientific investigations to prove the existence of T-Consciousness as an irrefutable phenomenon and a fact. Although science focuses solely on the study of matter and energy

and Sciencefact, by contrast, explores the effects of the [non-material/non-energetic] TCFs, Sciencefact has provided a common ground between the two by conducting reproducible laboratory experiments in various scientific fields, and it has used the scientific approach in proving TCFs.

The influence of the TCFs begins with the Connection between CCN as the Whole Taheri Consciousness of the universe and the subjects of study as a part. This Connection called "Ettesal" is established by a Faradarmangar's mind (a certified and trained individual who has been entrusted with the TCFs). The human mind has an intermediary role (Announcer) which plays a part by fleeting attention to the subject of study and then the main achievement obtained as a result of the effects of the TCFs. These fields cannot be directly measured by science, but it is possible to investigate their effects on various subjects through reproducible laboratory experiments (Taheri, 2013).

The research methodology in the study of T-Consciousness has been founded on the process of *Assumption, Argument, and Proof*, in which the basic Assumption is: The Cosmos was formed by a third element called T-Consciousness that is different from matter and energy.

The Argument: The existence of TCFs can be demonstrated by their effects on matter and energy (e.g., humans, animals, plants, microorganisms, cells, materials, etc.)

The Proof is the scientific verification of the effects of TCFs on matter and energy (according to the Argument) through various reproducible scientific experiments.

Accordingly, to investigate and verify the existence, effects, and mechanisms of TCFs, the following five research phases (Phases 0 through 4), and the aims of each phase are outlined below.

Phase-0 studies aim to prove the existence of TCFs by observing their effects. The nature of T-Consciousness and what it is will not be addressed in this phase. Phase-1 explores the varied effects of different TCFs. Phase-2 examines the reason behind the varied effects of these fields. Phase-3 investigates the mechanism of TCFs effects on matter and energy. Finally, Phase-4 draws significant conclusions, particularly with regard to the *mind and memory of matter* and their relation to the T-Consciousness, etc.

This study aimed to evaluate the effect of Faradarmani CF on FMD virus replication, titer, and RNA copy number as well as a humoral immune response against the two types of FMD vaccines with different adjuvants in rats.

METHODS AND MATERIALS

Faradarmani CF application

TCFs were applied to the samples according to the protocols regulated by COSMOintel research center (www.COSMOintel.com). A request for Connection to the CCN to utilize TCFs can be placed through the COSMOintel website in the "Assign Announcement" section. This access is available for everyone at no cost. In order to study and experience this Connection, the researchers can register on the website at any time and in order to report the experiment to the COSMOintel research center. Certain details of the experiment must be provided to the center; for example, the characteristics or number and name of samples and controls must be specified. This entire experiment was carried out as a double-blind method where lab technicians were completely unaware of TCFs theory, and the Faradarmangar at the COSMOintel research center who established the Connection was unaware

of the details of the study. Double-blind is a gold standard that is common in science experiments in the field of medicine and psychology, involving theoretical and practical testing.

In the present study, Faradarmani CF was announced simultaneously with the vaccines injections in treatment groups. In a similar way, for *in vitro* examinations, at the same time as the virus was inoculated in the cell culture flasks, treatment groups were under influence of Faradarmani CF.

FMD virus replication

FMD serotype O virus (FMDV serotype O) was originally prepared at Pirbright Institute and was used in this project. BHK (Baby hamster kidney) cell line was cultured in Dulbecco's Minimum essential medium (DMEM) high glucose, 5% FBS, 100 mg/ml penicillin, and streptomycin and incubated at 37 °C and 5% CO_2. Following 80% confluency of the monolayer of BHK Cell cultures in T-25 flasks, 0.5 ml of FMDV serotype O were inoculated with 10^7 TCID50 to each Faradarmani CF treated and control flasks. Each day cytopathic effect (CPE) was recorded under an inverted microscope for 48 hours. After 48h, samples were directed for Real-time-PCR tests. All the procedures were conducted in a biosafety level-3 laboratory (BSL-3).

2.3 Viral titration

96-well cell culture micro-plates were employed to determine viral titration (10^{-5} to 10^{-9} dilutions) using Reed & Muench method (Reed et al. 1938). Then, the plates were incubated for 72 h at 37 °C and 5% of CO_2. The flasks were daily examined to check the appearance of cytopathic effects.

Viral RNA extraction and Real-time RT-PCR reaction

Total RNA of samples was extracted using High Pure Viral RNA Kit (Roche) according to manufactures instructions. The Real-time reaction was carried out by Superscript III/Platinum Taq one-step kit (Invitrogen). A set of primers was used for detecting FMDV fragment 3D (polymerase RNA gene). The total volume of 20µl reaction mix contained 0.4 µl $MgSO_4$, 10µl 2x-reactions buffer, 2.6 µl Diethyl Pyrocarbonate (DEPC) water, 0.4 µl Enzyme Superscript III/Platinum, 0.25 µl of each primer, 0.1 µl probe, 6µl extracted RNA. Then, the tubes were placed into a Corbett Rotor-Gene device. The steps of amplification were done in the following temperature cycles: Reverse transcription (one cycle), 50 ºC for 30 minutes, the initial denaturing (one cycle), 95 ºC for 2 minutes, 95 ºC for 30 seconds, and 60 ºC for 30 seconds (40 cycles).

Preparation of complete FMD virus antigen for vaccines

Each flask of BHK cell (80% confluency) was inoculated with 2 ml of virus ($10^{6.8}$ TCID50/ml). After 18 hours, all flasks showed full cytopathic effect (CPE). The flasks containing the cell and the virus were then frozen at -70 °C and thawed twice to destroy the cells and extract the intracellular viruses. In the next step, the resulting suspension was filtered through a 0.2 µm filter. The viral suspension (500 ml) was centrifuged at 3000 rpm for 10 min at 4 °C. Deactivation of the virus was performed by binary ethylenimine at a concentration of 5 mM for 24 hours at 25 °C. Unused ethyleneamine in the viral suspension was neutralized by sodium thiosulfate (5 mM). Polyethylene glycol (8% w/v, 6000 kDa) was used to concentrate the inactivated virus. Finally, the prepared antigen was collected at a volume of 10 ml. The concentration of the prepared antigen was 2.5 mg/ml determined by the Lowry method (Lowry et al., 1951).

VACCINE PREPARATIONS

The vaccine containing aluminum hydroxide gel.

In the preparation of the aqueous vaccine, 33% aluminum hydroxide gel with a pH of 7.2 and saponin (6 mg/dose) were used.

The vaccine containing Adjuvant Freund

To prepare the vaccine containing Freund adjuvant, two types of complete and incomplete adjuvants (Sigma Co.) were used. In the composition of this vaccine, 50% antigen was mixed with 50% adjuvant Freund. Homogenization of the vaccine was performed with a 10-ml syringe with successive filling and emptying of the tube. In the first injection, the vaccine containing complete Freund, and in the subsequent injections, the vaccine containing incomplete adjuvant Freund was used.

Grouping of rats

In this study, 30 male Wistar rats weighing about 300 gr on average were used. Rats were divided into 6 groups (n=5 per group). Subcutaneously, 0.5 ml of the vaccine was injected into each rat in the area between the two shoulders. The 5 rats were considered as the negative control group. Grouping was done as follows:

- Group 1: FMDV (Type O) + Alum adjuvant
- Group 2: FMDV (Type O) + Alum adjuvant + Faradarmani CF
- Group 3: FMDV (Type O) + Freund adjuvant
- Group 4: FMDV (Type O) + Freund adjuvant + Faradarmani CF
- Group 5: Alum + recombinant VP1 (Positive Control)
- Group 6: Negative Control

Vaccination intervals held were every 14 days. Blood samples were taken on day zero and before each immunization dose. Blood samples were centrifuged at low speed (1500 ×g for 10 min at 4 oC) and their serum was isolated. The sera were incubated at 56 ° C for 30 minutes to inactivate their complement. Then, they were stored at -20 ° C until serological tests.

SEROLOGICAL TESTS

Serum neutralization test (SN) and ELISA (Enzyme-linked immunosorbent assay) were used to assess changes in antibody levels in the serum samples of rats after vaccination.

SN test

At first, the sera were serially diluted with Roswell Park Memorial Institute (RPMI) medium and 50 µl of each dilution was poured into each well in duplicate. Second, 50 µl of serotype O virus with a titer of 10^3 TCID50/ml was added to each well. Then, plates were placed in an incubator at 37 °C for 60 minutes. Next, 50 µl of IBR-S2 cell line (0.5×10^5 / well) was added. Finally, the plates were incubated at 37 °C. After 48 hours, the plates were examined for CPE effects. Test results were determined based on CPE observation. The highest dilution of serum, which was able to prevent CPE in 50% of wells, was considered a neutralizing antibody titer. Finally, serum titers were calculated.

ELISA

FMDV serotype O was diluted 1/10 with coating buffer ($NaHCO_3$ / Na_2CO_2, 0.05 M, pH = 9.5), 100 µl of which was added into 96 micro-plate wells and incubated at 4 °C overnight. All contents

of the micro-plate were discharged and washed three times with PBS-T (500 µl PBS, 20 µl Tween 20). Skim milk 5% (in PBS-T) was used to block the empty space between antigen molecules at the bottom of the wells. After blocking, washing was done four times with washing buffer.

For determining the appropriate dilution of serums, two positive and negative control serum samples were diluted as a checkerboard. Four dilutions (1:25, 1:50, 1: 100, and 1: 200) of the mentioned sera were prepared and tested in PBS-T and skim milk %1. Finally, a 1: 100 dilution was detected at a proper concentration.

For the addition of unknown sera, 100 µl of rat serum was added to each well and incubated for 75 minutes at 37 °C. The washing steps were repeated four times.

For adding the secondary antibody, 100 µl of Rabbit Anti-Guinea Pig Horseradish Peroxidase Conjugated (Sigma) was added to each well and incubated at 37 °C for 75 minutes. After this step, washing was done 5 times. Substrate (TMB: 3,3',5,5'-Tetramethylbenzidine) (100 µl) was then added to all wells and placed at room temperature and in the dark for 15 minutes. In the end, 50 µl of 1 M hydrochloric acid was added as a stop solution and the optical absorption (OD) of samples was read by an ELISA reader at 450 nm.

RESULTS

Impact of Faradarmani CF on replication, titer, and RNA copy number of FMD virus

In this study, the compatibility of the virus with the BHK cells, their growth, and proliferation were evaluated in the cell culture. Results of virus titration (TCID50 calculation) are presented in Table 1. On average, in each passage, a half-log is added to the virus titer. The duration of the observed cytopathic effects was started from 6 to 7 hours after inoculation of the virus and reached its peak in 12 hours. In cultures affected by the Faradarmani CF, cells could survive longer in the face of the virus.

The results of the real-time RT-PCR assay were assessed by the C_t values. There were differences in C_t values between the Faradarmani CF treat-

Table1. TCID50 and Real-time PCR assay results

Virus	NO.	TCID50 (log)	Overall mean (log)	Distance (log)	C_t values
Faradarmani CF treatment group	1	7.2	6.96	0.53	8
	2	6.7			10
	3	7			8
Control group	4	6.8	6.43		9
	5	6			10
	6	6.5			9
Faradarmani CF treatment group (Second repeat)	1	8.25	8	0.44	6
	2	7.75			7
	3	8			6
Control group (Second repeat)	4	8	7.56		6
	5	7.2			8
	6	7.5			8

ment and control groups. The lower Ct values in the Faradarmani CF treatment group indicate that the number of viruses was greater in the samples under influence of Faradarmani compared to the controls.

Serum neutralization and ELISA tests

In this study, serological evaluation of samples was performed at 14-day intervals after immunizations (Table 2). The sera of each group was mixed (pooled) at each stage of blood sampling. In all groups, a significant change was found in antibody levels in the second blood sampling stage (before the second injection). A significant increase was seen in antibody levels in the titration of neutralizing antibodies in blood samples after the second injection in all groups except the control group. Interestingly, in Faradarmani CF treated groups in Freund adjuvant and Alum adjuvant vaccines, there was a significant increase in protective antibodies in rats who received several injections compared to groups without Faradarmani (Table 2). Therefore, Faradarmani CF can be considered an effective treatment for increasing the success of immunization and vaccination against serotype O FMD virus. Moreover, the rate of immune stimulation rate of the recombinant VP1 protein was lower than in the groups with and without the Faradarmani CF in the third and fourth immunization in the titration of neutralizing antibodies. The effect of the Faradarmani CF on the immunogenicity of the FMD vaccine with Freund adjuvant was more than the alum adjuvant.

The evaluation of antibody concentration was performed by coating the whole particle of the inactivated virus with ELISA and its mean OD results are shown in Table 3. The sera of each group was pooled at each stage of blood sampling. The 0.2 cut-off was determined based on bovine negative serum samples. Increased antibody titers against FMD serotype O virus were seen in all the vaccinated rat groups. The results of ELISA indicate a

Table2. Results of serum neutralization test after injection of different vaccines

Studied groups	First BS (0 day)	Second BS (14 days)	Third BS (28 days)	Fourth BS (42 days)
FMDV (Type O) +Alum adjuvant	0.3	0.5	0.8	1.4
FMDV (Type O) + Alum adjuvant + FCF	0.3	0.7	1.1	1.7
FMDV (Type O) + Freund adjuvant	0.3	0.5	0.9	1.2
FMDV (Type O) + Freund adjuvant + FCF	0.3	0.8	1	1.9
Alum + recombinant VP1 (Positive Control)	0.3	0.5	0.6	0.8
Negative Control	0.3	0.3	0.3	0.3

BS: Blood sampling, FCF: Faradarmani Consciousness Field, VP1 is a structural viral peptide that has high immunogenic characteristics.

Table3. Results of ELISA test after injection of antigens with alum and Freund adjuvants in the studied groups.

Studied groups	First BS (0 day)	Second BS (14 days)	Third BS (28 days)	Fourth BS (42 days)	Fifth BS (56 days)
FMDV (Type O) + Alum adjuvant	-	0.35	0.59	0.92	2.60
FMDV (Type O) + Alum adjuvant + FCF	-	0.5	0.81	1.2	3.1
FMDV (Type O) + Freund adjuvant	-	0.28	1.10	1.57	2.82
FMDV (Type O) + Freund adjuvant + FCF	-	0.41	1.5	2.1	3.5
Alum+ recombinant VP1 (Positive Control)	-	0.30	0.55	0.42	0.65
Negative Control	-	0.10	0.20	0.15	0.12

BS: Blood sampling, FCF: Faradarmani Consciousness Field, VP1 is a structural viral peptide that has high immunogenicity.

significant increase in antibody titer in groups affected by the Faradarmani CF treatment compared to the group without Faradarmani CF treatment.

DISCUSSION

In virus culture, Faradarmani CF treatment increased the survival of the cells. Viruses, as intracellular parasites, rely on their host cells for energy, macromolecular synthesis, and genome replication (Whitaker-Dowling et al., 1999, de Castro et al., 2013). Therefore, in groups under influence of Faradarmani CF, viruses have more time to be replicated in the host cells.

In the present study, Faradarmani CF increased protective antibodies in rats who received several injections in both Freund and Alum adjuvant vaccine groups compared to the groups without Faradarmani CF. Therefore, the Faradarmani CF can be used to increase the success of immunization and vaccination against the FMD serotype O virus. The effect of the Faradarmani CF on the immunogenicity of the Freund adjuvant-containing vaccine was more than the alum adjuvant-containing group. Freund's complete adjuvant is an oily adjuvant containing the Mycobacterium, but alum (aluminum hydroxide) adjuvant is a mineral adjuvant. According to this observation, it seems that Faradarmani CF probably has a greater impact on organic-based adjuvants or those with organic components. Furthermore, the results of ELISA indicated a significant increase in antibody titer in groups affected by Faradarmani CF compared to the groups without Faradarmani CF.

In order to evaluate the humoral immune response of rats against inactive target antigens in control groups, at least two injections should be performed. However, in groups under Faradarmani CF effect, this protective effect was completed in the second injection. Furthermore, the immunogenic power of the complete antigen of the killed FMD serotype O virus with Freund and alum adjuvants was much higher than that of VP1 protein. Similar to the results ELISA, the serum neutralization test results on antigen with complete adjuvant Freund as well as incomplete composition, higher levels of antibodies were found in the serums of the Faradarmani CF group than the control and alum groups. It seems that the use of Faradarmani CF as a complementary factor in immunization and vaccination can cause a greater immune response and better safety in livestock.

In previous studies, the effects of the TCFs on MCF7 cancer cell line (Taheri et al., 2020a), Alzheimer's disease rat models (Taheri et al., 2021b), spatial memory, and avoidance behavior of a rat model of Alzheimer's disease (Taheri et al., 2021c), wheat plant (Torabi et al. 2020), bacterial population growth (Taheri et al., 2021d), viral growth (Taheri et al. 2021a), and the electrical activity of the brain during Faradarmani in the Faradarmangars population have been investigated (Taheri et al., 2020b).

As it was mentioned in the introduction section, since TCFs are neither matter nor energy, cannot be measured directly, but it is possible to investigate their effects indirectly through various experiments. We suggest other researchers conduct more experiments to clarify the effects of the Faradarmani CF on different types of vaccines.

ACKNOWLEDGMENTS

This study was performed in the Keyvan Virology Specialty Laboratory (KVSL) located in Tehran, Iran. We would like to acknowledge the

members of this laboratory for their assistance in experiments.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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Mohammad Ali Taheri is a scholar, visionary thinker, and innovationist known for his numerous theoretical concepts, including Cosmic Consciousness Network (CCN) and Taheri Consciousness Fields (TCFs) with over 40 years of history. T-Consciousness is introduced and defined as one of the constituent components of the Cosmos in addition to matter and energy, from which TCFs, as non-material/non-energetic fields, are derived. TCFs are unique qualitative fields that are immaterial in nature but have a direct effect on matter and energy, including humans, animals, plants, microorganisms, molecules, cells, and particles. As far as the practical application of T-Consciousness is concerned, two complementary medicines of Faradarmani and Psymentology have been introduced and put into practice.
In 2020, Mohammad Ali Taheri introduced Sciencefact, that utilizes science as a means to demonstrate and record the effects of TCFs. Although science studies matter and energy alone, Sciencefact and science do share a common ground which is reproducible laboratory experiments that involve matter and energy. What distinguishes Sciencefact from science is the investigation and utilization of CCN through the application of the TCFs.

Established and managed by Mohammad Ali Taheri in 2022, the Journal of Cosmointel is an all-science journal that publishes original research on TCFs. As a scientific journal, all types of scientific research that adhere to ethical guidelines and publishing standards of Cosmointel Journal and T-Consciousness research protocol are eligible for publication. Cosmointel establishes the guidelines for conducting scientific research on TCFs and publishes the results in its journal spanning various disciplines, including biology, T-Consciousness biology, physics, engineering, material science, medicine, neurosciences, psychology, etc.

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