

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

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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.

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**Dr. Laleh Amani was an outstanding, 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.

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 the 1980s, 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-



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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 Faradarmani CF 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 ΔC_t 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'- CGAC-CAGGCCGTGAGCAAGCAGC -3', 5'- GGAGACCTTCGCCGCTTGTTCGC-3', *MexB*; 5'- TGTCGAAGT-

TTTTTCATTGAG-3', 5'- AAGGTCACGGTGATGGT-3', *OprM*; 5'-GATCCCCGACTACCAGCGCCCCG-3', 5'- ATGCGGTACTGCGCCCGGAAGGC-3' and *rpoD* (housekeeping gene); 5'- GGGCTGTCTCGAAT-ACGTTGA-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 95°C for 5 min, followed by 40 amplification cycles of 95°C for 30 sec, annealing temperature for each gene for 30 sec, 72°C 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 \pm 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



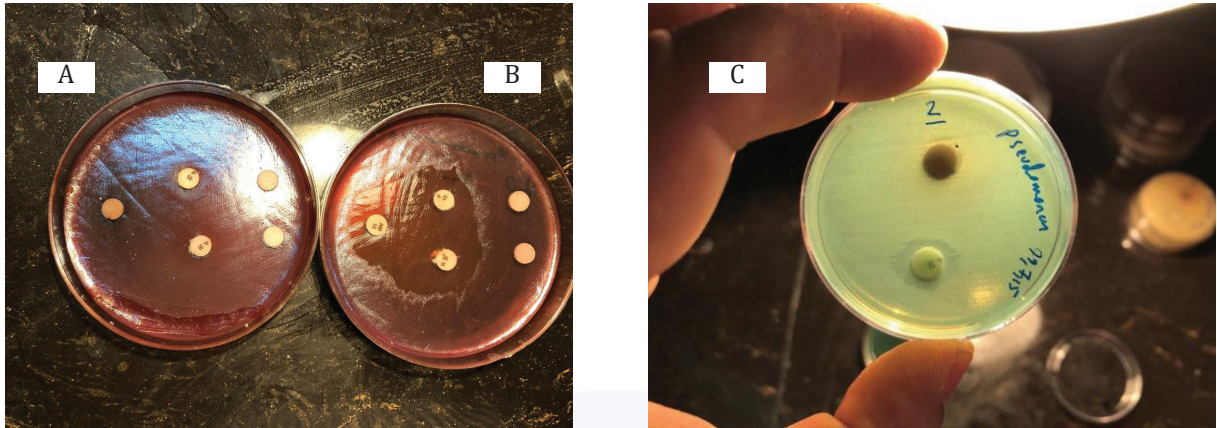


Figure 1. The disk diffusion test results of *P. aeruginosa* resistant strain with penicillin, ampicillin disks and disks without antibiotic as the negative control. A) Growth of *P. aeruginosa* resistant strain around the antibiotic disks (penicillin and ampicillin) in BA medium and absence of Faradarmani 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.

Table 1. The inhibition zone (mm) of disk diffusion test on BA medium of *Pseudomonas aeruginosa*

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

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

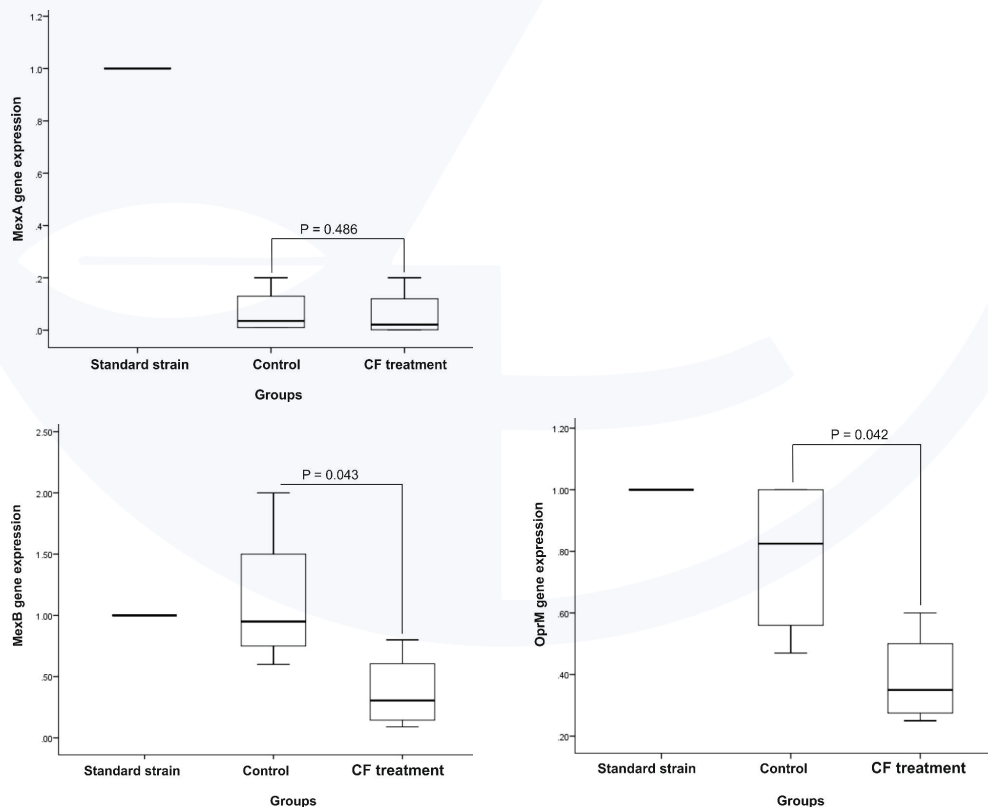


Figure 2. RNA expression level of *MexA* (a), *MexB* (b), and *OprM* (c) genes in the control and Faradarmani treatment and standard strain of *P. aeruginosa* PAOI as the positive control. An asterisk displays a significant difference ($p < 0.05$) between the Faradarmani CF treatment and control groups.

(Figure 1 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 ef-

fects 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.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.



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