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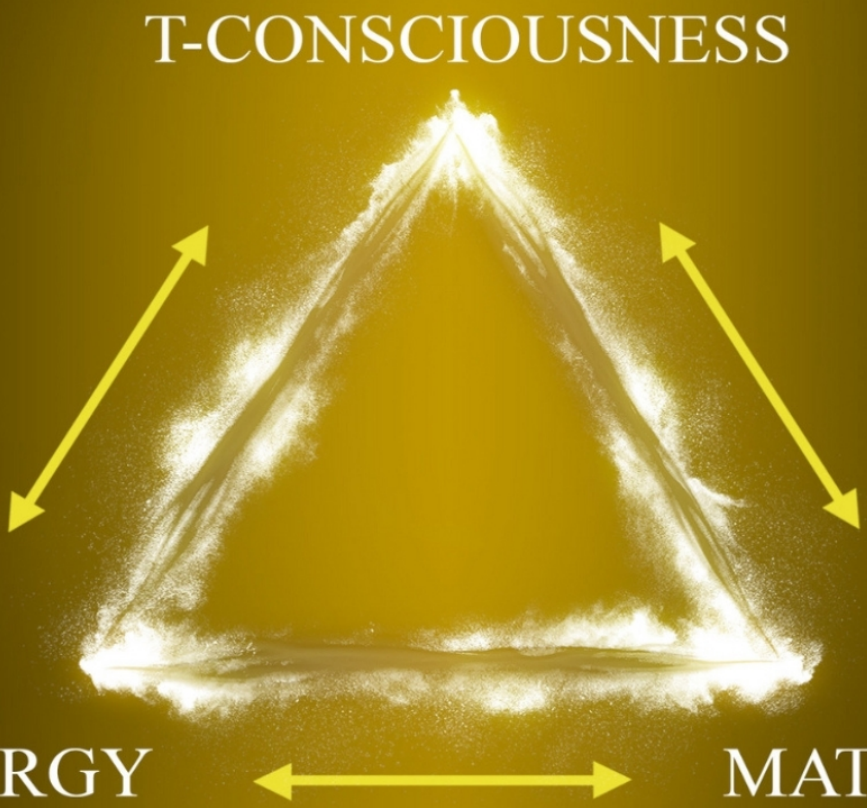

T-Consciousness Fields and their Application in Cancer Research

Mohammad Ali Taheri | Founder of T-Consciousness Theory

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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Given that Sciencefact focuses on researching the effects of TCFs that are new to the scientific world, the journal is not yet peer-reviewed in the traditional sense at this time (although, the journal articles currently do undergo a rigorous review process by the Cosmointel Committee of Scientific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 Particles, 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[1] 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

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

basis of the reported results and the fundamentals of Taheri's teachings with clarity and according to the 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.

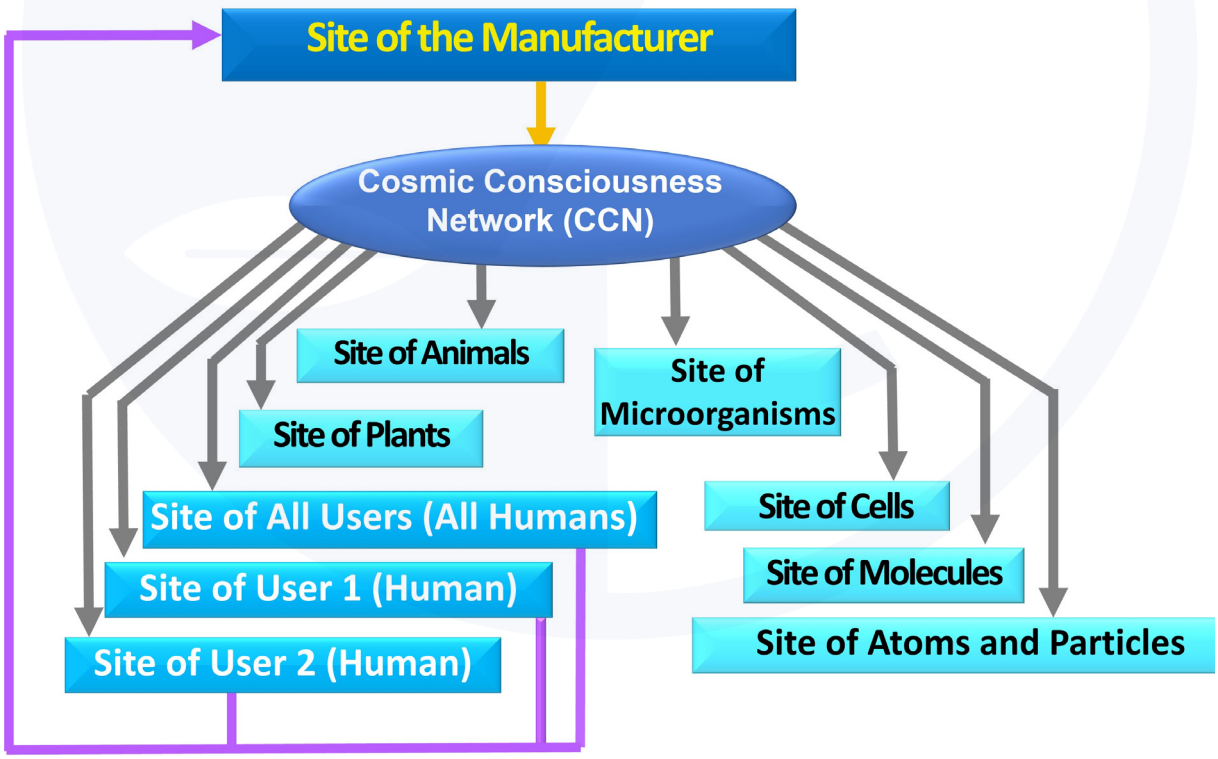
Phase III Studies - Investigating the mechanism of T-Consciousness Fields' effects:

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

The Influence of Faradarmani Consciousness Field on the Survival and Death of MCF-7 Breast Cancer Cells: An Optimization Perspective

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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.

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ABSTRACT

Mohammad Ali Taheri, the founder of the Faradarmani Consciousness Field (CF) maintains that beyond matter and energy, there are Taheri Consciousness Fields (TCFs) that can be accessed through the connection of the consciousness of the subject of study to the Cosmic Consciousness Network (CCN). This causes an optimization in a subject's structure and function. Apart from the fact that most studies in the field of cancer are aimed at the death of cancer cells, the purpose of this study was to investigate the MCF-7 cancer cell survival and death according to their optimal nature under the influence of the Faradarmani CF. For the purpose of this investigation, cellular viability was evaluated by MTT assay for 6-24 h under the influence of the Faradarmani CF. Consequently, cell cycle analysis was performed for the evaluation of apoptotic cell death. Finally, the expression of Bcl2 and Bax genes in MCF-7 cells was evaluated as a validation of the obtained cellular scale results. Our findings demonstrate that the Faradarmani CF treatment significantly induced cell proliferation in the MCF-7 cell culture in specific test conditions mediated by increasing cellular viability by about 18% in comparison to the control in a time-dependent manner. Moreover, the S-phase in the cell cycle, as a sign of cell population in the sample treated with the Faradarmani CF, was increased by 56% (up to 24h) in comparison to the control. The real-time RT-PCR reaction results show that in cells treated with the Faradarmani CF, the Bax/Bcl2 ratio decreased after 24 h (more than the 1-fold negative control (untreated)), suggesting a higher cell survival and resistance to death. Considering the concepts of the TCFs, according to Taheri, proliferation and survival appear to become optimized in MCF-7 cancer cell lines under the influence of the Faradarmani CF.

Keywords: Bax/Bcl2; Cell cycle; Taheri Consciousness Fields; Cosmic Consciousness Network; Faradarmani Consciousness Field; MCF-7; MTT assay; Survival

Acknowledged in most empirical research studies, the nature of consciousness, its location, and mechanism of action in humans are largely unmeasurable and unknown (Hameroff and Penrose, 2014)

In fact, the concept of consciousness has different definitions and applications in different branches of research, from philosophy, clinical psychology, and neuroscience to cognitive science, quantum physics, and biology. Common fields of study explore the nature of consciousness (Crick and Koch 1998; Modestino 2016; Penfield 1938), for instance: (a) the consciousness nature is studied in philosophy, (b) experiences of consciousness at different levels of individual and social life are investigated in psychology, and (c) consciousness creation during information processing at the network level of the nervous system, neurotransmitters and other processes of the cerebral cortex are explored in cognitive neurology.

Investigations of the connection and correlation of consciousness and bodily processes and cognitive disorders in psychoneuroimmunology (Moynihan et al., 2010; Torkamani et al., 2018), psychosomatic disease and processes (Montecucco 2015; Puente 1984) and biofeedback research (Bagdasaryan and Le Van Quyen 2013; Kannape and Blanke 2013) are also frequently reported. Explanation of consciousness by quantum physics keywords (Jahn 1993; Neppe and Close 2015) and its reduction in quantum physics and quantum biology (Hameroff and Penrose 1996, 2014) are more recent approaches in basic science toward understanding the concept of conscious-ness. In the Orch OR theory, introduced by Pen-rose and Hameroff (1996), events in the field of consciousness were analyzed in the form of electromagnetic fields caused by molecular structures of the nervous system, related to the fundamentals of quantum mechanics and space–time geometry. According to the concepts of this theory, there is a connection between the brain's biomolecular processes and the basic structure of the universe, relating the brain's structure and function to consciousness in the universe, as published in a review (Hameroff and Penrose, 2014).

According to Chalmers, explaining whether, why and how organisms have experiences of consciousness separate from objective material processes has been termed the hard problem of consciousness (Chalmers, 1995). Different studies tackle the problem of consciousness with different approaches. For example, in the pan-psychic approach, everything material, however small, has an element of individual consciousness (Bruntrup and Jaskolla 2016; Du Toit 2016). Understanding the relationship between consciousness and the wider dimensions of the universe is covered in numerous studies. Moreover, Ervin Laszlo, in his connectivity hypothesis (Laszlo, 2010) introduces a new Integral science that merges the concepts of consciousness with quantum, cosmos, and life criteria by considering his own concept of "coherence in nature". This time- and space-invariant (nonlocally) coherence causes nonconventional connections between the parts that make up a system as well as between systems and their surrounding environment. He believes that nature comprises connected coherent systems in space, containing physically effective "in-formation", and is as fundamental as energy such that it is also conserved.

Approaches close to the hypothesis of a non-physical nature having consciousness attributions have also been reported (Bruntrup and Jaskolla 2016; Laszlo 2010; Nelson 2006; Radin 2007; Sheldrake 2013). A study in 2000 from the CIA reports the need for separation of consciousness from matter and energy in a "triangular structure" (Shuji 2000). In this study, consciousness is quantified based on ba-

sic mathematical and physical equations.

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 T-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. TCFs 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 with over 40 years of history, 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 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.

Some descriptive (Taheri 2014; Taheri and Mizani 2013) and clinical (Rahimabadi et al.,

2017; Taheri et al., 2013; Taheri et al., 2011; Taheri et al., 2013) studies have been performed to experience the Faradarmani CF applications. Apart from the theory and mechanism of action of the introduced TCF, it seems that what must first be taken into account is the repetitive influence of TCF on the subjects under the conditions of empirical research, especially in basic sciences. Investigating the apoptotic behavior of cancer cells in their interactions with drugs is one of the common screening mechanisms for drug efficacy and specificity (Pilco-Ferreto and Calaf, 2016; Rahnamay et al., 2018).

On the other hand, considering cancer and its process and also its therapeutic resistance as an evolutionary process have been reviewed in more than 2000 research papers (Aktipis et al., 2011; Merlo et al., 2006). Moreover, studying the effects of the dimensions of consciousness on the growth of cancer cells and its clinical applications have been very limited (Brown 2000; Radin et al., 2015; Zachariae et al., 2005). Also, in vitro study of cancer cell line proliferation behavior to be optimized according to its nature has not been reported yet. For this purpose, in the present study, we explore the behavior of MCF-7 cancer cells in controlled growth conditions as well as under the influence of the Faradarmani CF. Finally, the effect of the Faradarmani CF treatment on changes in cell proliferation, cell cycles and apoptosis gene expression were analyzed with respect to the application of the CF and its action.

Materials and Methods

Application of Faradarmani CF

TCFs were applied to the samples according to the protocols regulated by the 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 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, we requested an announcement for MCF-7 cancer cells in incubator No. B, with dishes on the 2nd level, and the first level was kept as the control group. We also specified the time conditions to announcer, i.e. 24, 48, and 72 hours from a set time point. The only relationship between the announcer and the researcher is contractual and related to the sample plate, control plate names and positions in the incubator; for example, the names of the plate A in the upper level of the incubator I and plate B in the lower level of incubator I.

Spacing condition: In this study, three spacing conditions were selected between the sample (affected by Faradarmani CF) and control groups.

No. 1- The middle spacing test: sample and control cell plates were cultured in the same incubator at 5% CO2 and at 37$^{o\,C}$ but at different 96 well plate and at distinct separable distances, for example two different incubator levels.

No. 2- The highest spacing test: samples were placed in a 96-well plate in an incubator and the control groups were placed in another 96-well plate in a different incubator in different laboratory operating at the same conditions (i.e. 5% CO2 and at 37°C).

No. 3- The lowest spacing test: sample and control groups were all in the same 96 well plate in an incubator.

Timing conditions: The Faradarmani CF was applied every one hour until the end of the experiment which was at 6, 18, and 24 hours from the initial start time. The Faradarmani CF was applied in the three aforementioned spacing test conditions and only to the sample plates. After the end of the testing time, MTT assay, cell cycle distribution, and real time RT-PCR experiments were performed, respectively.

Cytotoxicity evaluation by MTT assay

The cytotoxic effect of the Faradarmani CF was assessed by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) colorimetric assay. Cells were seeded in 96-well plates (SPL, South Korea) at densities of 5×10^3 cells/ml and were exposed to Faradarmani CF and Doxorubicin (Dox) (as a positive control) for 6, 18, and 24 hours. After 24 hours, 20 µl/well of MTT solution (5 mg/ml) was added and incubated at 37°C for two hours. The supernatant was then discarded, formazan crystals were solubilized in 150 µl of DMSO/well, and their absorbance was evaluated by the micro-well plate reader (Bio-Tek, Elx 808, USA) at a wavelength of 570 nm.

Cell cycle distribution analysis

Flow cytometry was employed to examine the cell phase distribution by identifying the nuclear DNA content. MCF-7 cells (1.5×10^5 cells/ml) were seeded in 12-well plates and treated with the Faradarmani CF and Dox (as a positive control) for 12- 48 hours. Untreated cells were used as a negative control. Briefly, after expiring the incubation period, cells were collected and rinsed in cold 1xPBS, then stained with propidium iodide (20 µg/ml) for 1 hour in the dark. Consequently, cells were sorted in a FACSCalibur flow cytometer (BD Biosciences, San Jose, CA, USA), and the cell cycle proportion was interpreted by FlowJo software (Ashland, OR, USA). Distributions of cells in the G0, G0/G1, S, and G2/M phases were determined as DNA histograms. Apoptotic cells were displayed as a hypodiploid (the sub-G1) peak.

RNA extraction, cDNA synthesis, and real-time RT-PCR

After the extraction steps, 1 to 2 µl of extracted RNA from each sample was transferred onto agarose gel to ensure its integrity. In this experiment, two bands related to S28 and S18 ribosomal RNAs are clearly visible due to their high concentration, which indicates the extracted RNAs are healthy and non-degradable during the extraction process.

The total RNAs from *announced/un-announced* MCF-7 cells were extracted after 12-24 hours of treatment using RNX-plus reagent (Cinnagen, Iran), as the manufacturer recommended. The quality and quantity of extracted RNAs were evaluated respectively by using the 1% agarose gel electrophoresis and Nanodrop (Thermo Scientific, USA).

Table 2 . Primer sequences used in real-time PCR.

Gene name	Forward and Reverse Primers (5`-3`)	Annealing Temp. (°C)	Amplicon size (bp)
β-*actin*	F: AGAGCTACGAGCTGCCTGAC R: AGCACTGTGTTGGCGTACAG	58	184
Bax	F: GCAAACTGGTGCTCAAGG R: ACTCCCGCCACAAAGA	64	187
Bcl2	F: TGGGAAGTTTCAAATCAGC R: GCATTCTTGGACGAGGG	64	297

F = Forward; R = Reverse

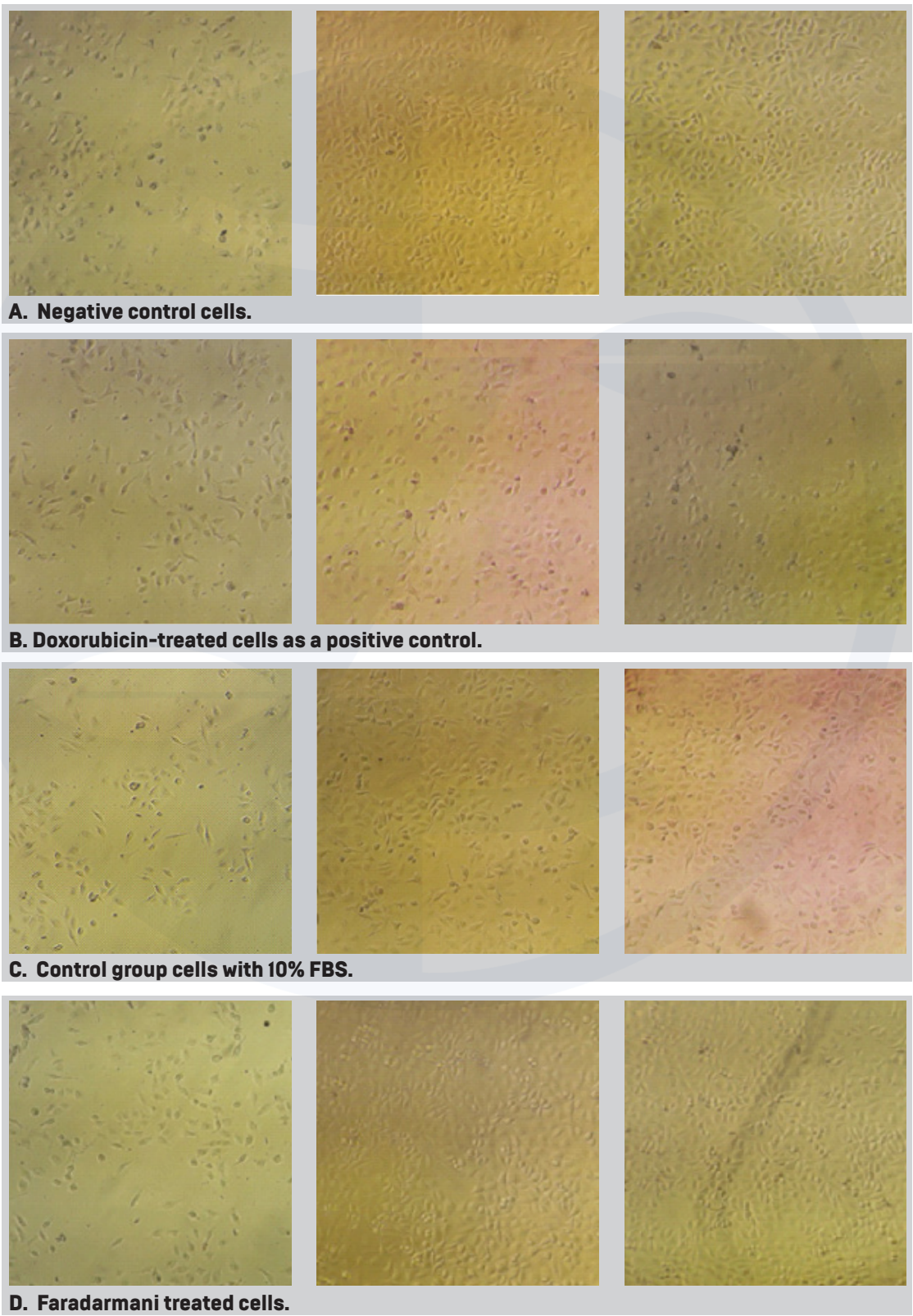


Fig 1 . MCF-7 cells in each group at 6h (left), 18h (middle) and 24h (right) treatment. a: Negative control cells; b. Doxorubicin-treated positive control cells; c. 10%FBS control cells. d. Faradarmani CF treated cells.

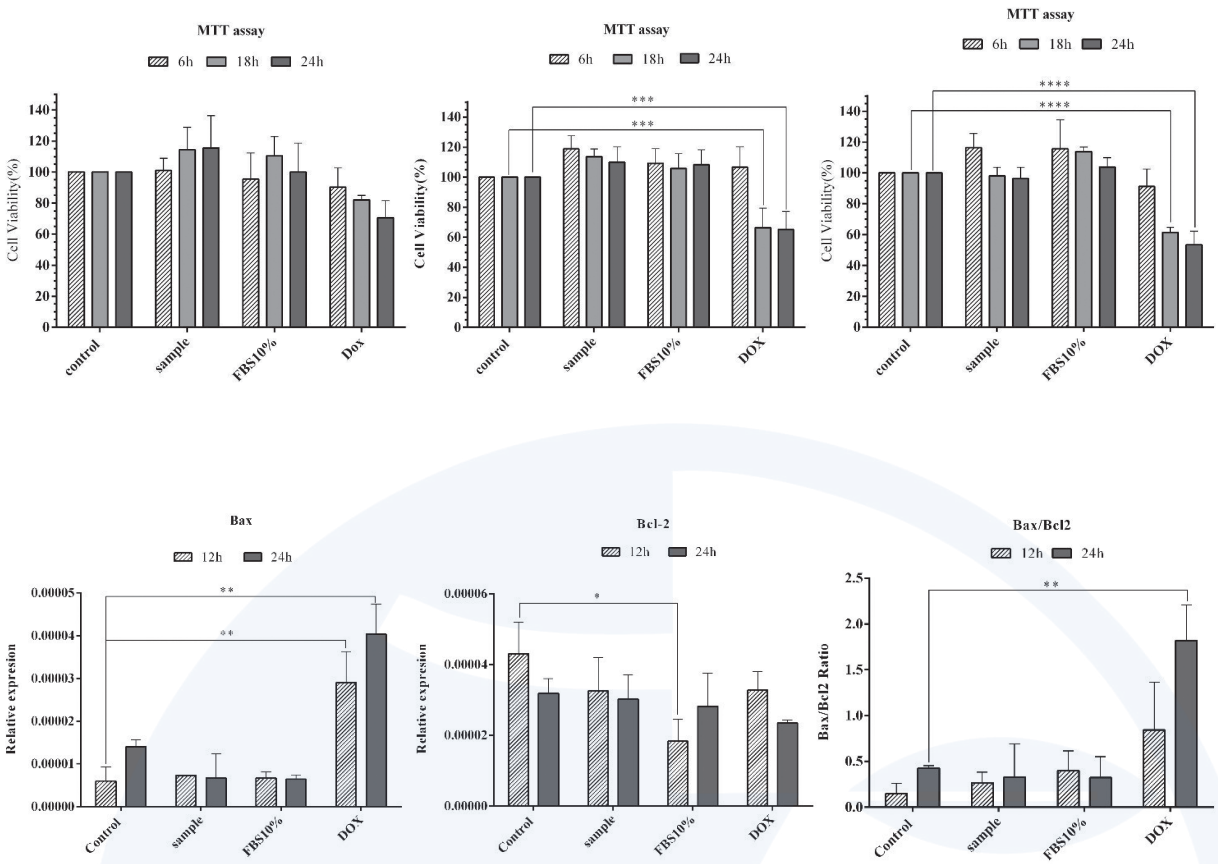


Fig 2 . The diagram of samples treated with Faradarmani CF (sample), Dox (positive control), and dietary factor (FBS 10%) compared to the untreated or negative control (control), evaluated by MTT test at three treatment times of 6, 18, and 24 hours in the three spacing test conditions. Right: No.1 spacing test condition; middle: No.2 spacing test condition; left: No. 3 spacing test condition. The data indicated as the mean ± SD of three individual trials. Stars show the level of significance from three independent samples t-test (*P<0.05, **P<0.01, ***P<0.001, ns: not significant)

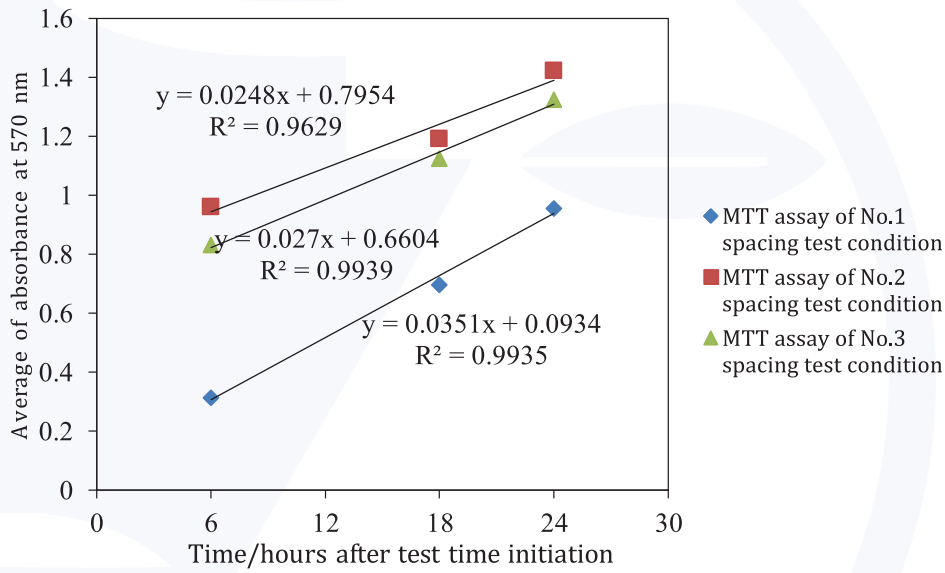
In the spacing test conditions of No. 2 and No. 3, none of the changes in cell viability is significant in the samples under Faradarmani CF and FBS 10% treatments. In contrast, there are decreases in cell viability of the positive control (Dox) at 18 and 24 hours in spacing test conditions No.2 and No.3, with p-values <0.01 and <0.001, respectively (Fig 2).

Population change trends in all test groups during the first 24 hours after test initiation

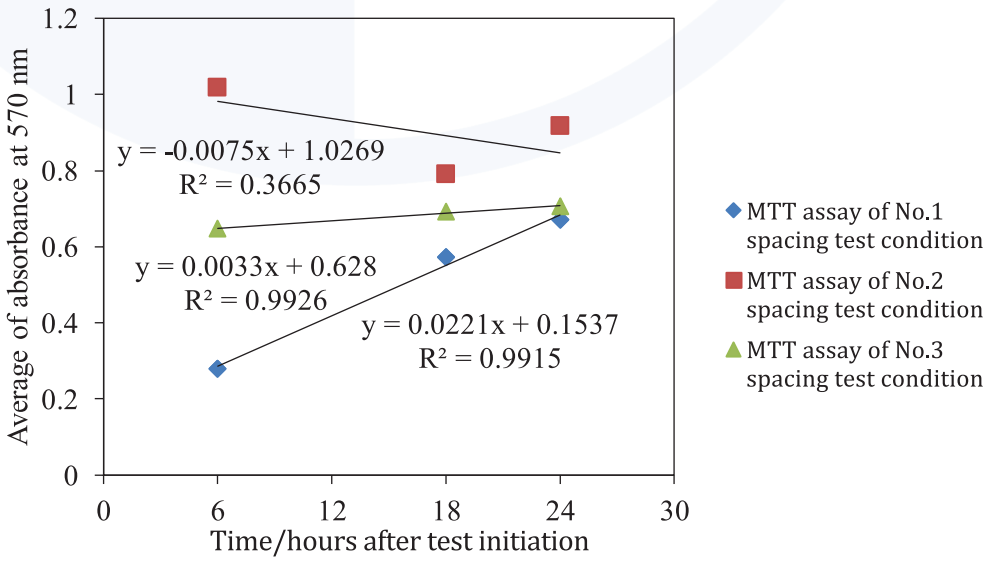
Fig 3 shows the analyses of the cell population viability changes in each study group (controls and sample) compared with one another in three spacing test conditions. As presented in Fig 3 A, the slope of increase in negative control cell viability in spacing test condition No. 1 is approximately 32% and 30% more than the No. 2 and No. 3 spacing test conditions, respectively. Fig 3B shows that the slope of increase in population decreases at 37% in test condition No.1 compared with negative control. Moreover, this increase under treatment of Dox suggests the lowest drug efficacy in the No.1 spacing test condition in comparison with two other spacing test conditions. The highest efficacy of Dox treatment is observed in the No. 2 spacing test condition.

As indicated in Fig 3C, cell viability is increased in positive control groups in the No.1 spacing test condition at approximately 3.8% lower than the negative control, not a significant number. However, the increase is 31% and 92% higher than No.2 and No. 3 spacing test conditions, respectively.

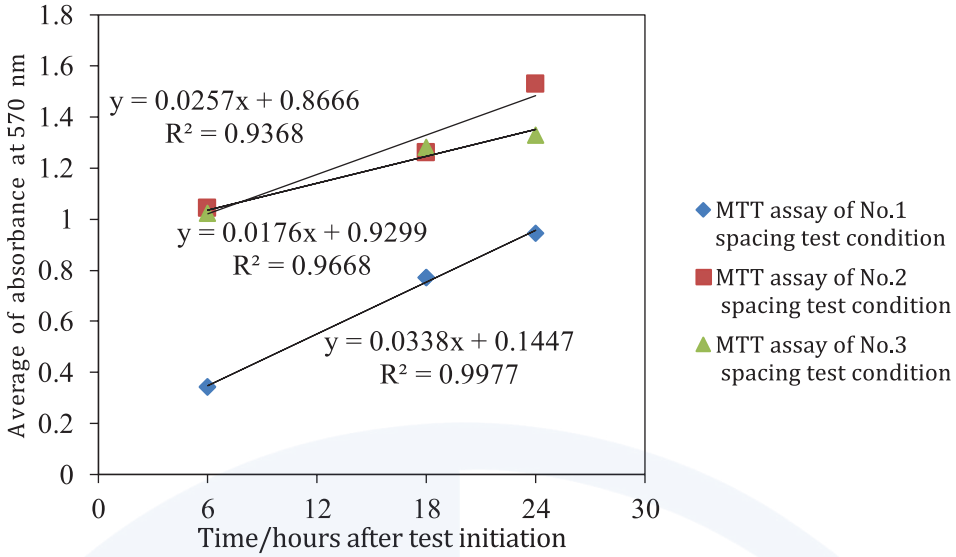
As shown in Fig 3D, the No.1 test condition with a 41%higher slope of the population is increased in comparison with negative control, showing the highest rate of increase in cell viability 24 hours after test initiation. While this increase in two other spacing test conditions is lower than according to the negative control.



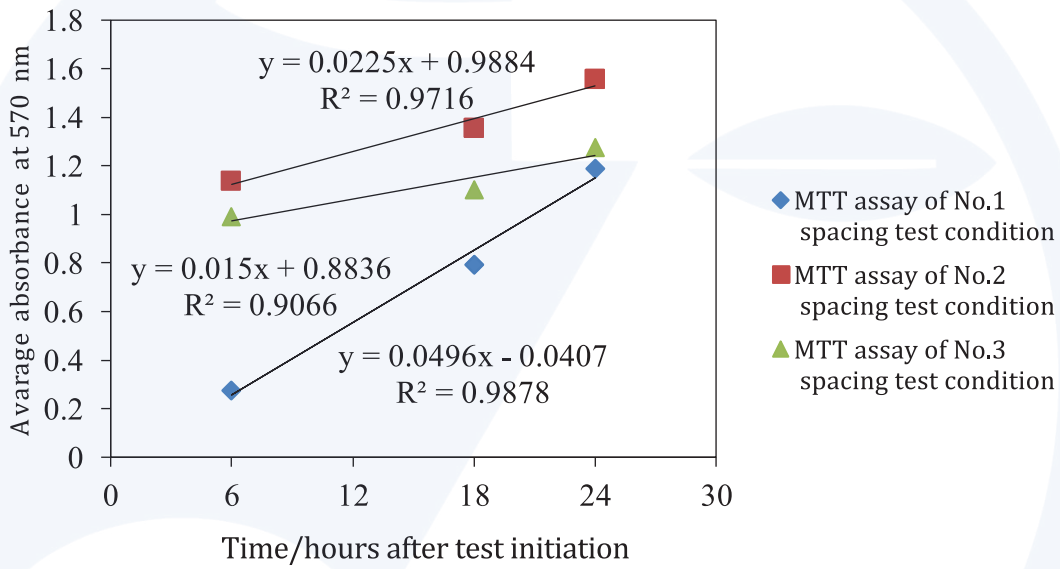
A. The MCF-7 cell viability increased in negative controls groups.



B. The MCF-7 cell viability changed under Doxorubicin (Dox) treatment (positive control).



C. The MCF-7 cell viability increased in FEB 10%.



D. The MCF-7 cell viability increased in the sample groups (with Faradarmani CF treatment).

Fig 3. Cell population viability changes in each study group (controls and sample) compared with one another in three spacing test conditions. A) Negative control cells; B) Doxorubicin-treated positive control cells; C) 10% FBS control cells. D) Faradarmani CF treated cells. Blue diamond: MTT assay of No. 1 spacing test. Red cube: MTT assay of No. 2 spacing test. Green triangle: MTT assay of No. 3 spacing test.

Flow cytometry

In the No.1 spacing test condition, MCF-7 cells are treated in order to investigate the effect of the desired treatment at different cell cycle stages. In the negative control, most of the population is in the G0/G1 phase (Fig 4A). After treatment with DOX-positive control cells, the cell population in the SubG1 phase increases significantly in a time-dependent manner compared to the control (Fig 5). The accumulation of cells in this region indicates the induction of apoptotic cell death in the cells.

However, there are no significant changes in the SubG1 phase cell population in cells treated with Faradarmani CF (Fig 4C) and in cells treated with more nutrients (FBS) (Fig 4B). In contrast, cells treated with Faradarmani CF show a 56% increase (up to 24h) in the S phase compared with control (Fig 5). These data are consistent with the data from the drug

toxicity test (MTT assay), suggesting growth inhibition and cell death in Dox-treated cells and increased growth and viability in the Faradarmani CF cells.

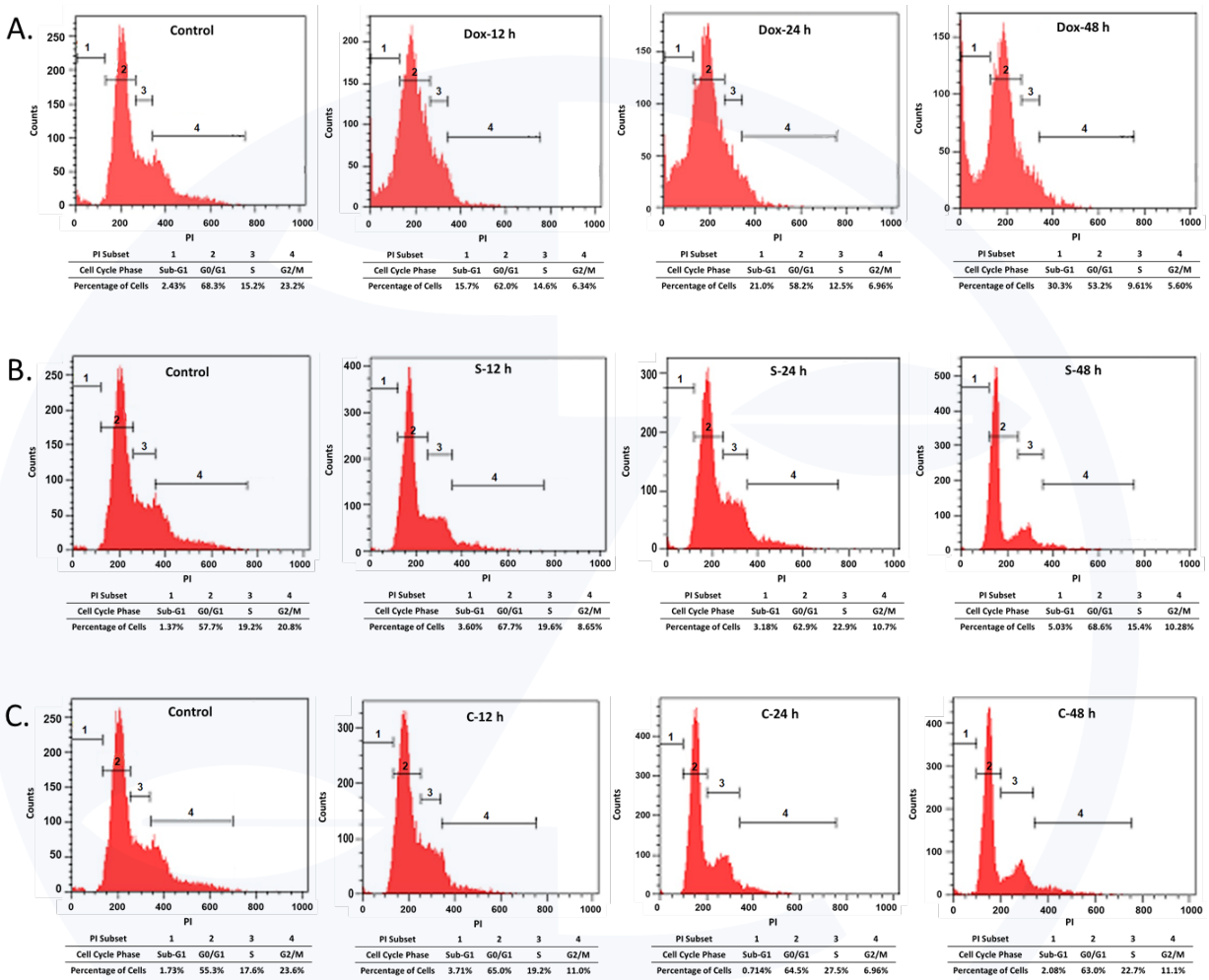


Fig 4. Cell cycle at different stages in each group of study; A. DOX-treated cells; B. FEB 10% -treated cells; C. Faradarmani CF-treated cells. All groups were compared with the negative control.

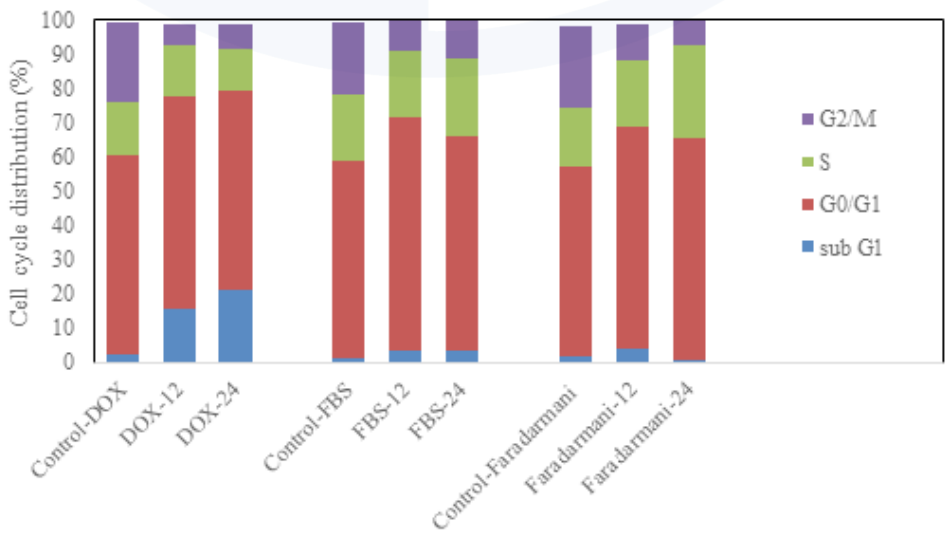


Fig 5. Cell cycle distribution of sample and controls up to 24h.

Gene expression analyses for Bcl2 and Bax genes

Herein, we examined the expression of *Bax* and *Bcl-2* pro-and anti-apoptotic members of the Bcl2 family. The results of the real-time RT-PCR demonstrate that in the cells treated with Faradarmani CF in the No.1 spacing test condition, the *Bax*/*Bcl-2* ratio was decreased after 24 hours (more than 1-fold as compared with the negative control), indicating improved cell survival and resistance to cell death. However, in cells treated with Dox as a positive control, the *Bax*/*Bcl2* ratio was significantly increased (more than 10-fold compared to the negative control), which induced apoptotic cell death (Fig 7). These data confirm that the Faradarma-ni CF results in a gradual time-dependent de-crease in the ratio of *Bax*/*Bcl-2* transcripts.

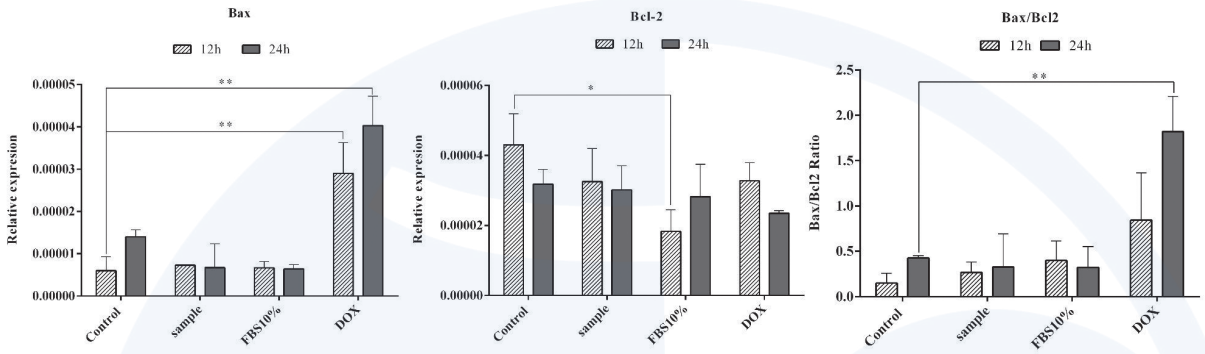


Fig 6. The expression changes of *Bax*, *Bcl-2* genes in MCF-7 cells treated with Faradarmani CF (sample), Dox (positive con-trol) and dietary factor (FBS 10%) compared to untreated or negative control cells. The cells were exposed to the compound for 12-24 h and relative expression levels were measured by real-time RT-PCR.

Discussion

In this study, we assumed that T-Consciousness is universal, and its role is important in processes taking place in systems. The hypothesis of TCF, introduced by Taheri, claims that this pervasive dimension of T-Consciousness does not only apply to theoretical concepts but also it can be applied to any living and non-living levels of the constructed systems. Considering the concepts of the TCF, every part of the ecosystem has effective and constructive connections with the network of T-Consciousness. Over time, and through numerous events and factors, this relationship may be disrupted in some components of beings. In the case of living beings, this disruption is considered an illness, pain, anomalies, and so on. According to the claim made in the theory of Faradarmani CF (as one of the TCFs), FCF application is a unique method because of the facilities it provides for establishing the Connection between the existing subjects under the study and CCN. Subsequent to this Connection, the correct form of data and information is transmitted from CCN to the subject under study, and improvements in its structure and function can be observed under the general rules of the ecosystem.

In order to investigate the evidence of this claim, MCF-7 cancer cell behavior was studied under the treatment of Faradarmani CF, at three selective intervals between samples and controls. Cells were monitored for proliferation, apoptosis, and cell cycle expression of genes related to cell death and survival. By examining the overall variations of cell populations compared to the own control state in each distance test, it is found that MCF-7 cancer cells gained more proliferation and survival at the middle distance (No. 1 condition) selected in this study because of Faradarmani CF treatment. On the other hand, by comparing changes in the cell populations of each group at three selective intervals between the sample and control groups, we find that the spatial condition

has a significant additive effect on the growth conditions of the negative and positive control groups. Moreover, CF also increases resistance to toxicity, as shown in the MCF-7 cells treated with Dox. This significant incremental effect of the Faradarmani CF on cell populations is also confirmed by cell cycle assays showing increased expression of survival genes. Three key points can be extrapolated from these results. First, Faradarmani CF affects all cells at the cellular and molecular levels. Second, the MCF-7 cell line is reinforced in its cancerous qualities due to the Faradarmani CF. Lastly; it is found that the best distance to achieve meaningful and repeatable results in the sample under the Faradarmani CF influence is a specific distance from the control.

In conclusion, by considering the theoretical concepts of TCF introduced by Taheri and the results of the present study, more proliferation and survival appears to be the optimized and efficient mode of cancer cell lines within the framework of ecosystem rules and in accordance with the behavior of MCF-7 cells. We suggest similar survival and death analyses of other cells, either cell lines or primary cells, to study the effect of Faradarmani CF on cancer cell behavior.

Repository

Harvard Dataverse
https://doi.org/10.7910/DVN/UBC7FG
This project contains the following underlying data:

•Data file 1. (Raw CT values for RT-PCR (B-actin))
•Data file 2. (Raw CT values for RT-PCR (Bax))
•Data file 3. (Raw CT values for RT-PCR (Bcl2))
•Data file 4. (FCS of DOX treated cells for the first time)
•Data file 5. (FCS of DOX treated cells in the second time)
•Data file 6. (FCS of DOX treated cells in the third time)
•Data file 7. (FCS of FBS 10% treated cells in the first time)
•Data file 8. (FCS of FBS 10% treated cells in the second time)
•Data file 9. (FCS of FBS 10% treated cells in the third time)
•Data file 10. (Fig 2-Left-Raw unedited and uncropped microscope image)
•Data file 11. (Fig 2-Middle-Raw unedited and uncropped microscope image)
•Data file 12. (Fig 2-Right-Raw unedited and uncropped microscope image)
•Data file 13. (Fig 3-Left-Raw unedited and uncropped microscope image)
•Data file 14. (Fig 3-Middle-Raw unedited and uncropped microscope image)
•Data file 15. (Fig 3-Right-Raw unedited and uncropped microscope image)
•Data file 16. (Fig 4-Left-Raw unedited and uncropped microscope image)
•Data file 17. (Fig 4-Middle-Raw unedited and uncropped microscope image)
•Data file 18. (Fig 4-Right-Raw unedited and uncropped microscope image)
•Data file 19. (Fig 5-Left-Raw unedited and uncropped microscope image)
•Data file 20. (Fig 5-Middle-Raw unedited and uncropped microscope image)
•Data file 21. (Fig 5-Right-Raw unedited and uncropped microscope image)
•Data file 22. (Graph-DOX treated cells)
•Data file 23. (Graph-FBS 10% treated cells)
•Data file 24. (Graph-Faradarmani treated cells)
•Data file 25. (FCS of Faradarmani treated cells for the first time)
•Data file 26. (FCS of Faradarmani treated cells in the second time)
•Data file 27. (FCS of Faradarmani treated cells in the third time)

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Conflict of Interest

The authors declare that there is no conflict of interest

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Effects of Taheri Consciousness Fields on the Rat C6 Glioma Cell Line

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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

ABSTRACT

The most common primary spinal cord and brain tumors are gliomas, representing 81% of malignant brain tumors. In neuro-oncology investigations, the rat C6 glioma cell line has mostly been utilized as an experimental model system. Taheri Consciousness Fields (TCFs) founded and introduced by Mohammad Ali Taheri, are novel fields that are neither matter nor energy. Therefore, they are non-quantifiable and cannot be directly observed or measured. However, it is possible to demonstrate and measure the effects of these fields through standard scientific experiments. This study aimed to evaluate the effect of TCFs (A and B) on the C6 glioma cell line in three and four treatments compared with the control (nono-treatment) group. To study the morphology and microscopic properties of the cells, cells were detached and stained with trypan blue then the dead cells were counted. An MTT assay was used in order to evaluate the effect of TCFs. The expression of *Bax* and *Bcl-2* genes was assessed by using the RT Real-time PCR. The results showed that the TCFs treatment not only reduced the number of the C6 glioma cells but also changed their morphology. Similarly, in the trypan blue dye count, more dead cells were counted in the TCFs groups in comparison to the control group. In the MTT assay, both TCFs displayed a cytotoxic effect in incubation times on the C6 glioma cells ($p< 0.05$). *Bax*/*Bcl2* ratio increased to 3.5 and 7-fold, compared to the control via TCF (A), and (B), respectively ($P<0.05$). The findings suggest that TCF (A) and (B) can induce apoptosis in the rat C6 glioma cells. The TCF (B) effect was greater than the effect of TCF (A) in all tests. The mechanism of action of TCFs is not still definable by researchers, and it can be useful to elucidate the effects of the TCFs treatment in vivo and in clinical research.

Keywords: Taheri Consciousness Fields, C6 glioma cells, Cell viability

INTRODUCTION

The most common tumors in the central nervous system (CNS) are gliomas, which originate from glial cells (Louis et al., 2016). The prevalence and mortality of gliomas are expected to increase, especially in developing countries (A Ghotme et al., 2017). The overall survival rate of patients with glioma is about 20 to 36 months, while the survival in the most malignant types is not more than 14 months. In recurrent cases of malignant glioma, the average time for progression of the tumor is only eight weeks despite routine treatment (Ashby et al., 2004). Even with progress in combination therapy with chemotherapy, radiotherapy, and surgery, the glioma patient's prognosis is still extremely poor (Hanif et al., 2017). Compared with the poor outcome and slowly developing technologies for radiotherapy and surgery, the innovation and application of new methods are crucial.

Despite the fact that several cancer treatments have been developed in recent decades, few drugs have been approved for the treatment of glioma by the Food and Drug Administration (FDA). One of the reasons for the lack of progress in the treatment of glioma is the blood-brain barrier, which limits the delivery of therapeutic agents to the brain. The unique CNS structure inhibits from entering the most anticancer drugs into the brain, poses challenges to the progress of anti-glioma drugs (Ballabh et al., 2004, Oberoi et al., 2015). No single strategy is strong enough to make significant progress in treating glioma, so the use of novel strategies may lead to successful solutions.

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. TCFs 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 research, 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), wheat plant (Torabi et al., 2020), bacterial population growth (Taheri et al., 2021d), viral replication (Taheri et al., 2021a), and the electrical activity of the brain during Faradarmani in the Faradarmangars population (Taheri et al., 2020b).

This study aimed to evaluate the effect of T-consciousness fields (A and B) on three and four announcements in the C6 glioma cell line compared with the non-treatment group (control) by counting and evaluating the number of dead cells, morphology, and microscopic characteristics in cell culture and then MTT test for cell viability and in another step quantitative evaluation of *Bax* apoptotic and *Bcl-2* anti-apoptotic genes expression by using RT Real-time PCR.

Methods and Materials

Application of the TCFs

TCFs were applied to the samples according to the protocols regulated by the 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. Announcement programs are shown in Table 1.

Table 1 . Announcement programs for the treatment and control groups.

Groups	Number of Announcements	Announcement intervals after seeding of cells			
TCF(A) group	3	20 min	24 hours	48 hours	
TCF(B) group	4	20 min	24 hours	48 hours	72 hours
Control	0	-	-	-	-

Cell culture and trypan blue staining assay

C6 glioma was prepared by the National Cell Bank of Iran. The cells were cultured in the DMEM F12 media, supplemented with 10% fetal bovine serum (FBS), and 1% penicillin/streptomycin, and incubated at 37 ℃, 90% humidity, and 5% CO_2.

Trypan blue is a vital dye that leaves living cells unstained, while non-living cells with a distinct blue color are seen under a microscope. Living cells have a healthy cell membrane and therefore do not take in the stain.

In order to study the morphology and microscopic properties of the cells, cells of the 6-well plates were detached by trypsin and mixed with one part of cell suspension and one part of 0.4% trypan blue and were incubated for 3 min at room temperature. Then dead cells were counted by hemocytometer slide and were determined the percentage of living/dead cells. Three replications were considered for all groups.

The formula for calculation of the percentage (%) of the dead cells stained with trypan blue (Strober 2015):

$$\text{Dead cell (\%)} = (A_{\text{Dead cell}}/A_{\text{all counted cell}}) \times 100$$

MTT assay

In order to accurately evaluate the effect (cytotoxicity) of TCFs in the two groups, TCF(A) and TCF(B), in comparison with the non-treated group (control), the MTT assay was used. This is a colorimetric method based on the reduction of yellow tetrazolium by the enzyme succinate dehydrogenase. First, an appropriate number of the cells were seeded in each of the plate wells (10,000 cells per well). After 48 hours and 72 hours for the TCF(A) group and TCF(B) groups, respectively, following the microscopic examination of cells, each plate wells medium was replaced with the MTT solution (0.5 mg/ml MTT in fresh medium), and then they were incubated for 4 hours under 5% CO_2, and 37℃. Then, the supernatant was removed, and 100 µl dimethyl sulfoxide (DMSO) was added. The plates were shaken for 10 minutes. The absorbance of wells was measured and reported at 570 nm with an ELISA reader (BDSL Immunoskan MS, Finland). In order to estimate the percentage of living cells, the following formula was applied (Chueh et al., 2014), and also all experiments were repeated three times:

$$\text{Cell Viability (\%)} = \frac{OD\ test - OD\ blank}{OD\ control - OD\ blank} \times 100$$

Evaluation of gene expression by the RT Real-time PCR method

Expression of *Bax* and *Bcl-2* was assessed in C6 glioma cancer cells by using RT Real-time PCR. For this purpose, the Favor Prep total RNA Isolation Kit (Favorgen, Taiwan) was employed. Extraction steps were performed according to the kit instructions. After extracting RNA from each sample, the quantity and purity of obtained RNA were evaluated using a NanoDrop 2000 spectrophotometer (Thermo Fisher Scientific).

For cDNA synthesis, we used the cDNA synthesis kit (Biotechrabbit GmbH, Germany), according to the instructions of the kit manufacturer.

The Real-time PCR reaction was performed in a MIC real-time PCR system (BioMolecular systems, London, UK). The final volume of each reaction was 20µl , which contained 10 picomoles of reciprocating primers of *Bax* and *Bcl-2* genes for each reaction, 40 ng cDNA, 10 µg SYBR green PCR master mix (Ampliqon, Denmark). In this study, the *GAPDH* gene was considered the reference gene. The sequences of primers utilized are listed in Table 2.

Table 2 . Name and sequence of the primers used in the real-time PCR.

Target Gene	Sequence of primers	Length	Annealing Temperature
Bax	F: 5'-TTGCTTCAGGGTTTCATCCAG-3' R: 5'-AGCTTCTTGGTGGACGCATC-3'	101 bp	65
Bcl-2	F: 5'-TGTGGATGACTGAGTACCTGAACC-3' R: 5'-CAGGCAGGAGAAATCAAACAGAG-3'	122 bp	66
GAPDH	F: 5'-CGTCTGCCCTATCAACTTTCG-3' R: 5'-CGTTTCTCAGGCTCCCTCT-3'	74 bp	63

The following conditions were applied for the PCR reaction: first incubation step was 94°C for 12 min, followed by 40 cycles for amplification, each cycle, including a denaturation step for 15 s at 94°C, an annealing step for 15 s at 62-67°C and an extension step for 10 s at 72°C. For verification of the specificity amplicons, the analysis of the melting curve was performed. The comparative expression of genes was considered by the standard $2^{-\Delta\Delta ct}$ (Livak et al., 2001, Arocho et al., 2006).

Statistical analysis

The one-way ANOVA was applied to assess the TCFs effect on cell viability, genes expression level examination tests, and $p < 0.05$ was considered the significant level.

Results

Evaluation of morphology and microscopic properties

Microscopic examination of the C6 glioma cells showed that these cells, for the control group, averaged 20×10^4 cell/ml, for TCF(A) group, was 15×10^4 cell/ml, and for the TCF(B) group was 14×10^4 cell/ml.

In addition to reducing the number of cells, notable points about the effect of TCFs on cancer cells were changes in the morphology and specific appearance of the nucleus and cell widening. The cells of the TCFs groups were not significantly filled compared to the control group, and there were still empty spaces in the cell culture plate after 24, 48, and 72 h (Figure 1).

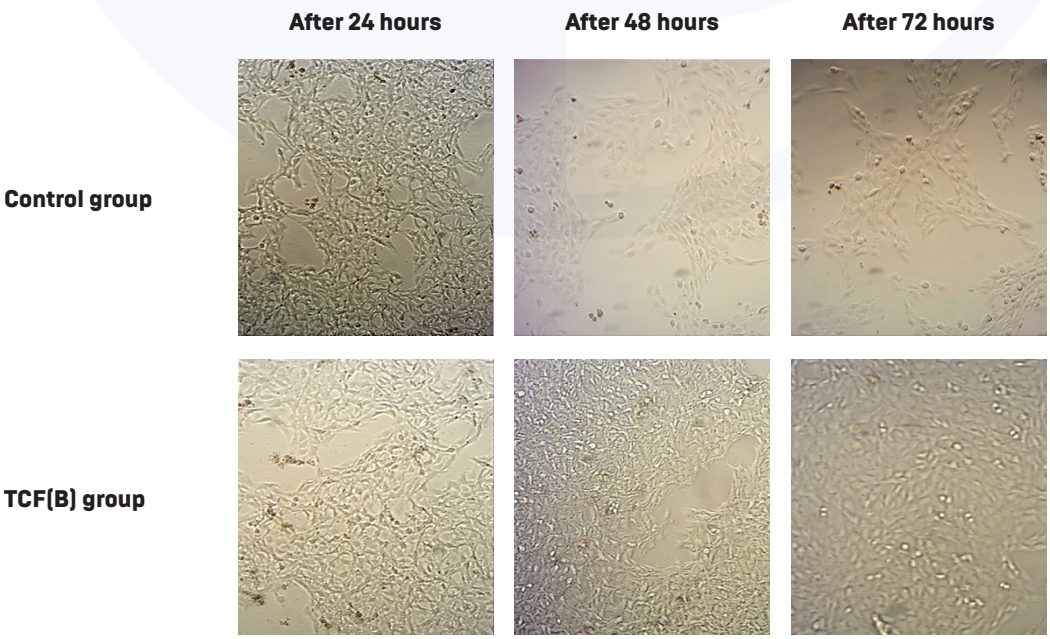


Figure 1. The microscopic evaluation of control and Taheri Consciousness Field (TCF) (B) affected cells at 24, 48, and 72 hours after culture. The TCF(B) group cells were not filled completely compared to the control group and there are still spaces among cells.

Trypan blue staining assay

On average, in trypan blue dye count, about 12%, more dead cancer cells were counted in the TCF (B) group, and 9% in the TCF(A) group compared with the control. This offers a significant, inducing effect of TCFs on the death of the C6 glioma cells ($p < 0.05$).

MTT test results of C6 glioma cell

In order to evaluate the viability of TCF (A) and TCF (B) treated cells, it was used from MTT assay. Results showed that both TCFs were significantly decreased the cells' viability compared with the control group ($p < 0.05$).

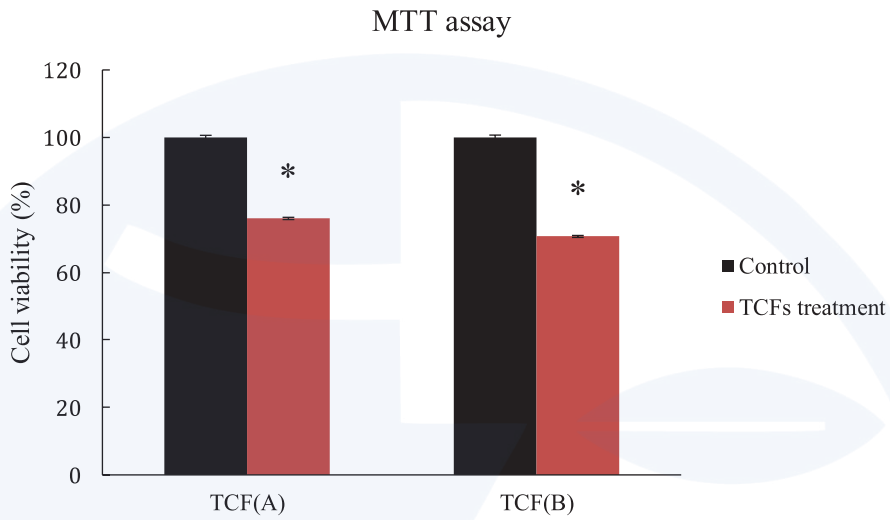
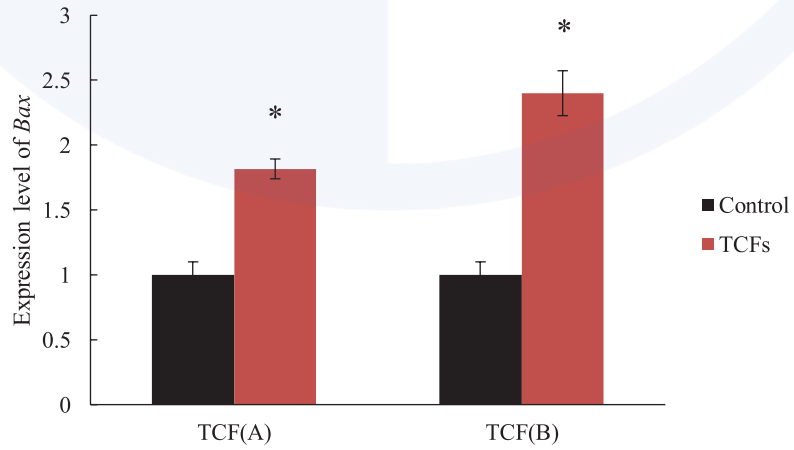


Figure 2. Viability of Taheri Consciousness Field (TCF) (A) and the TCF(B) treated cells compared with the control group. The asterisk (*) indicates a statistically significant difference ($p < 0.05$) between the experimental and control groups.

The RT Real-time PCR

The present study showed the alterations in the expression of *Bcl-2* (anti-apoptotic), Bax (pro-ap-optotic) genes, and the ratio of *Bax/Bcl-2* after stimulating the apoptotic state through TCF (A) and TCF (B) in the C6 glioma cell line. The expression of the *Bax* gene level was increased in both TCF (A), and TCF (B) treated cells compared with control (Figure3, a). The Bcl-2 expression was decreased in both TCFs groups significantly ($p<0.05$; Figure3, b). The ratio of Bax/Bcl-2 is an indicator for determining cell susceptibility to apoptosis. *Bax/Bcl-2* ratio was significantly increased in the TCFs treated cells ($p<0.05$; Figure3, c).

a



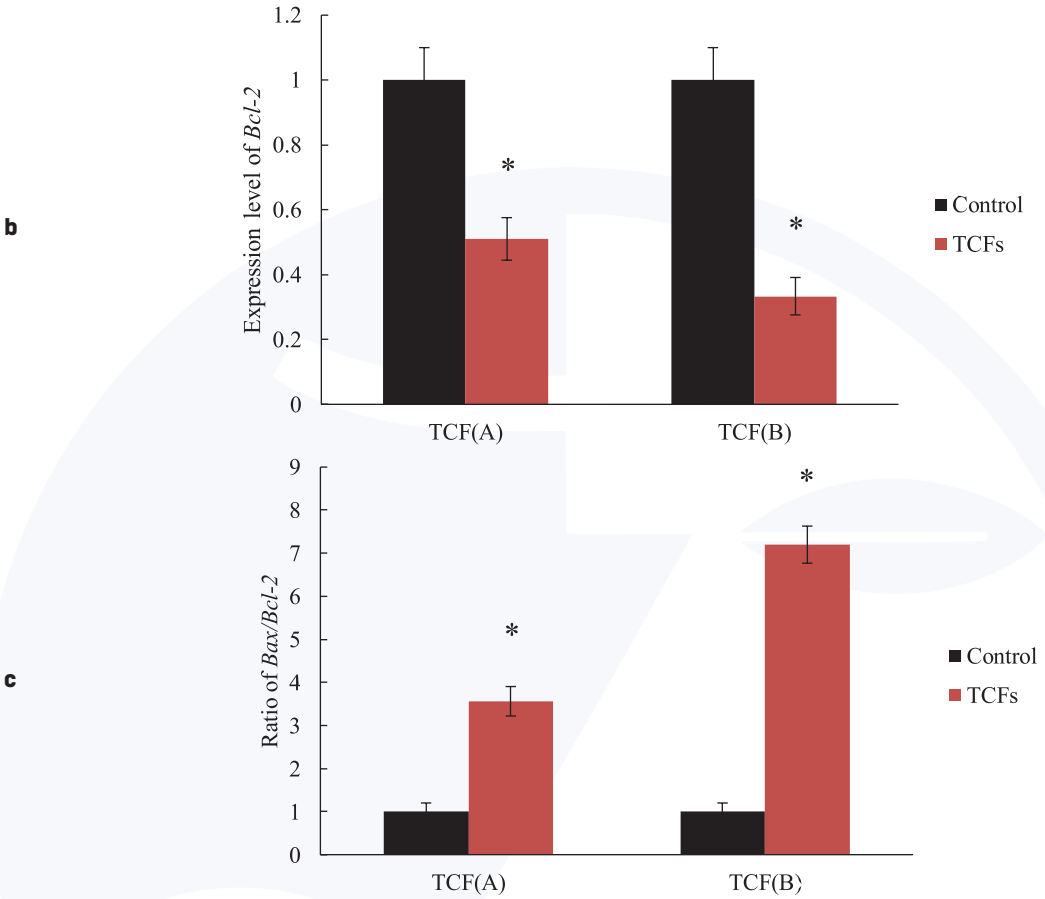


Figure 3. Expression of *Bax* (a) and *Bcl-2* (b) and the ratio of *Bax*/*Bcl-2* (c) in Taheri Consciousness Field (TCF) (A) and (B) treated cells compared with control. The asterisk (*) indicates a significant difference between the TCFs and control groups (p <0.05).

Discussion

The effects of two types of TCFs (A and B) on the number of dead cells, morphology, and microscopic characteristics in cell culture were evaluated. In addition, alteration of the *Bax* apoptotic, and *Bcl-2* anti-apoptotic genes expression under the influence of TCFs was investigated. Using MTT assay for evaluation of cytotoxicity induced by TCF (A) and TCF (B), it was found that both TCFs displayed cytotoxic effect in mentioned incubation times on C6 glioma cells (p< 0.05). In trypan blue dye count, more dead cells were counted in TCFs groups compared with control. This observation may be related to the inducing effect of the TCFs on the death of the C6 glioma cells.

The Bcl-2 family members possess a critical role in the regulation of death or survival of the cells. Chemotherapeutic drugs control the expression of various members of the Bcl-2 family in cancerous cells partially. The members of this family contribute significantly to apoptosis via activation (Bax) or inhibition (Bcl-2) (Green et al., 1998, Rao et al., 1997).

Investigation of Bax and Bcl-2 genes expression, along with *Bax*/*Bcl-2* ratio exhibited that the expression of the *Bax* gene was increased and expression of the *Bcl-2* gene was decreased in both TCF (A) and TCF (B) groups compared with control. The *Bax*/*Bcl-2* ratio helps the cell destiny determination (Gross, 2001). *Bax*/*Bcl-2* ratio increased to 3.5, and 7-fold compared to control via TCF (A) and TCF (B), respectively (P<0.05), which show significantly the apoptosis induced by TCF (A) and TCF (B).

In the previous study, the effect of Faradarmani CF on the MCF7 cells was evaluated. The Faradarmani CF was applied every hour until the end of the experiment, which was at 6, 18, and 24 hours from the initial start time. Cell viability was assessed by the MTT assay, and the gene expression of *Bax* and *Bcl-2*

in MCF-7 cells was assessed via the RT Real-time PCR . technique. Faradarmani CF significantly increased the proliferation of the MCF-7 cells (18%) in comparison to the control in a time-dependent manner. Moreover, the RT Real-time PCR results showed that in cells treated with Faradarmani CF, the *Bax*/*Bcl-2* ratio was decreased (1-fold) compared with control, which suggested a higher MCF7 cells survival and resistance to death (Taheri et al., 2020a).

The effect of TCFs on the cancer cells seemingly shows different results depending on the type of the cancer cells, duration, and frequency of announcements. The effect of TCF (B) in all experiments was greater than the effect of TCF (A), which indicates the different effects of each TCFs. The findings indicate that it is necessary to investigate other TCFs further and perform laboratory tests in a variety of areas. The mechanism of action of TCFs is not still definable by researchers, and this study suggests that in vivo and clinical research can be useful to elucidate the effects of TCFs treatment.

Acknowledgments

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Conflicts of Inte est

The authors declare no conflict of interest.

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Effects of Taheri Consciousness Fields on the HT29 Human Colorectal Cancer Cells

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ABSTRACT

Colorectal cancer accounts for 11% of all cancers diagnosed, and it is the second deadliest cancer worldwide. Surgery and chemotherapy or targeted therapy are generally used for the treatment of colorectal cancer. However, there are significant challenges, such as recurrence of tumor and drug resistance, so the application of novel methods is required for the treatment of this cancer. Taheri Consciousness Fields (TCFs) were founded and introduced by Mohammad Ali Taheri. These new fields are not energy or matter and cannot be measured directly. However, we can evaluate the effects of TCFs indirectly through various kinds of research in the laboratory. This study aimed to evaluate the effect of TCFs (A and B) on the HT29 human colon cancer cells in two and three announcements compared with the control group. The morphology and microscopic properties of cells were investigated in TCF (A) and TCF (B) groups compared with the control, and the cells were detached and stained with trypan blue, then the dead cells were counted. To evaluate the inhibitory effect of the TCFs, the MTT assay was used. The expression of two apoptosis-related genes (Bax and Bcl-2) was assessed using RT Real-time PCR. The results demonstrated that TCFs decreased the cell number and changed the morphology of the HT29 cells. In trypan blue dye count, more dead cells were counted in the TCFs groups compared with the control. In the MTT assay, both TCFs decreased the viability of cells on HT29 cells during in-cubation times ($p< 0.05$). *Bax/Bcl-2* ratio increased 4.9 and 7.6-fold in the TCF (A) and TCF (B) treated cells, respectively ($P<0.05$). Therefore, TCF (A) and TCF (B) induced apoptosis in HT29 cells. The TCF (B) effect was greater than the TCF (A) effect in all tests. There are still many ambiguities and questions about the nature and effects of TCFs. To clarify the issue, more research is needed in vitro, in vivo, and clinically.

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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: Taheri Consciousness Fields, HT29 human colon cancer cells, cell viability

The Theory of Taheri Consciousness Fields

The third most common type of cancer is colorectal cancer and is the second leading cause of cancer-related mortality rates worldwide. It is estimated that more than 1.8 million colorectal cancer cases and 881,000 related deaths occurred in the world in 2018 (Ferlay et al., 2019). Although the highest incidence of colorectal cancer is still seen in Western economically developed countries, it has recently increased rapidly in other parts of the world (Brenner et al., 2018). Modern investigations have shed light on the pathogenesis of colorectal cancer and offer advanced screening strategies. The prevalence of colorectal cancer is still increasing (Siegel et al., 2020). The current standard treatment of colorectal cancer removes the tumor with surgery and then adjuvant chemotherapy or targeted therapy. However, tumor recurrence and drug resistance are important challenges in treating colorectal cancer (Wolpin et al., 2008, Gao et al., 2021). The median overall survival of patients with metastatic colorectal cancer is approximately 30 months, indicating a poor prognosis in these patients (Van Cutsem et al., 2016). For this reason, innovative and more effective approaches and methods are essential for the treatment of metastatic disease.

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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. TCFs 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 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 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, 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) have been observed.

This study aimed to evaluate the effect of T-Consciousness Fields (A and B) with two and three announcements on HT29 human colon cancer cells compared with the non-treatment group (control). The comparison was made by counting and evaluating the number of dead cells, morphology, and microscopic characteristics in cell culture. MTT test to the comparison of cell viability in the treated and untreated group was done. Also, a quantitative evaluation of Bax apoptotic and Bcl-2 anti-apoptotic genes expression using the RT Real-time Polymerase Chain Reaction (PCR) was performed.

Methods and Materials

Application of Faradarmani CF

TCFs were applied to the samples according to the protocols regulated by the COSMOintel research center (www.COSMOintel.com). A re-quest for Connection to the CCN to utilize TCF s 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. Announcement programs are shown in Table 1.

Table 2 . Announcement programs for the treatment of HT29 cells and control groups

Groups	Number of Announcements	Announcement intervals after seeding of cells		
TCF(A) group	2	min 20	hours 24	
TCF(B) group	3	min 20	hours 24	hours 48
Control	0	-	-	-

Cell culture and study of morphology and microscopic properties of cells

The HT29 human colorectal cancer cells are not only utilized to investigate the biology of human colorectal cancers, but also it is receiving a special interest in studies of food bioavailability and digestion because of the capability to express properties of mature intestinal cells (Martínez-Maqueda et al., 2015). HT29 human colorectal cancer cells were obtained from the National Cell Bank of Iran. RPMI 1640 media (Gibco, Germany) with 10% fetal bovine serum (FBS) (Gibco, Germany) and 1% streptomycin/penicillin (Sigma Aldrich, Germany) was utilized for cell culture, and the cells were incubated at 37°C, 90% humidity, and 5% CO_2. The morphology and microscopic properties of cells were evaluated in the TCFs treatment and control groups.

Trypan blue staining assay

Trypan blue is a vital stain, which stains with a distinctive blue color the dead cells, while leaves living cells unstained are seen under a microscope. Living cells do not absorb stains because they have a healthy cell membrane (ref).

For the trypan blue staining assay, cells were detached from 6-well plates with trypsin, then an equal volume of cell suspension and trypan blue (0.4%) were mixed and incubated for three minutes at room temperature. Then dead cells were counted by hemocytometer slide and were calculated the ratio of living/dead cells. Three replications were considered for all examinations.

The formula for calculation of the percentage (%) of dead cells stained with trypan blue (Strober, 2015):

$$\text{Dead cell (\%)} = (A_{\text{Dead cell}}/A_{\text{all counted cell}}) \times 100$$

MTT assay

MTT assay was used to determine the effect of TCFs (A and B) on the viability of HT29 cells. First, the HT29 cells were seeded in 96 well microplates (10,000 cells per well). Then, after 24 hours for the TCF (A) group, and 48 hours for the TCF (B) group, the medium of wells was exchanged with MTT solution (0.5 mg/mL), and microplates were incubated at 37°C for four hours under 5% CO_2. Then, the MTT solution was replaced with 100µl dimethyl sulfoxide (DMSO). A plate reader (BDSL Immunoskan MS, Finland) was used for the evaluation of the absorbance of wells at 570 nm. All tests were repeated three times. to evaluate the cell viability, the following formula was utilized (Chueh et al., 2014):

$$\text{Cell Viability (\%)} = \frac{OD\ test - OD\ blank}{OD\ control - OD\ blank} \times 100$$

Evaluation of gene expression by RT Real-time PCR method

The expression of *Bax* and *Bcl-2* in HT29 cells was assessed by RT Real-time PCR using Favor Prep total RNA Isolation Kit (Favorgen, Taiwan). Extraction steps were performed according to the kit instructions. After extracting RNA from each sample, the quantity and purity of obtained RNA were evaluated through NanoDrop 2000 spectrophotometer (Thermo Fisher Scientific).

The cDNA was synthesized using a cDNA synthesis kit (Biotechrabbit GmbH, Germany) follow-ing the manufacturer's instructions. The Real-time PCR reaction was performed in a MIC real-time PCR system (BioMolecular systems, London, UK). The final volume of each reaction was 20 µl, which contained 10 picomoles of reciprocating primers of *Bax* and *Bcl-2* genes for each reaction, 40 ng cDNA, 10 µg SYBR green PCR master mix (Ampliqon, Denmark). In this study, the *GAPDH* gene was considered the reference gene. The sequences of p rimers utilized in the present study are listed in Table 2.

Table 2 . Name and properties of primers used in the real-time PCR.

Target gene	Sequence of primers	Length	Annealing temperature
Bax	'F: 5'-TTGCTTCAGGGTTTCATCCAG-3 'R: 5'-AGCTTCTTGGTGGACGCATC-3	101 bp	65
Bcl-2	'F: 5'-TGTGGATGACTGAGTACCTGAACC-3 'R: 5'-CAGGCAGGAGAAATCAAACAGAG-3	122 bp	66
GAPDH	'F: 5'-CGTCTGCCCTATCAACTTTCG-3 'R: 5'-CGTTTCTCAGGCTCCCTCT-3	74 bp	63

For the PCR reaction, the following conditions were provided: the first step was incubation at 94°C for 12 min, followed by 40 cycles for amplification, each cycle consists of a denaturation step for 15 seconds at 94°C, an annealing step for 15 seconds at 62-67°C and an extension step for 10 seconds at 72°C. Melting curve analysis was performed to confirm the specificity of amplicons. The comparative genes expression was calculated with the standard $2^{-\Delta\Delta ct}$ (Livak et al., 2001, Arocho et al. 2006).

Statistical analysis

One-way ANOVA was applied to evaluate the TCFs effects on cell viability, and genes expression level examinations, and $p < 0.05$ was considered the significant level.

Results

Evaluation of morphology and microscopic properties

In a microscopic examination of HT29 cells in the TCFs groups, the colonies were smaller, the cells were rounder, and less accumulation was seen. Also, the time required for cells to detach after trypsinization from the plate, which is usually three to five minutes, was reduced to two minutes in the intervention group (this could be due to cell weakness and mortality).

The cell confluency of the TCFs groups was significantly lower than the control group, and after incubation times, there were still empty spaces in the cell culture plate.

Trypan blue staining assay

The numbers of dead cancer cells of both the TCFs groups in trypan blue dye were counted on average at least 10% more than the control group.

MTT test results of HT29 human colon cancer cells

MTT assay was used to evaluate the viability of the TCF (A), and TCF (B) treated cells. Results showed that both TCFs significantly decreased the viability of the cells compared with the control group (Figure 1) ($p < 0.05$).

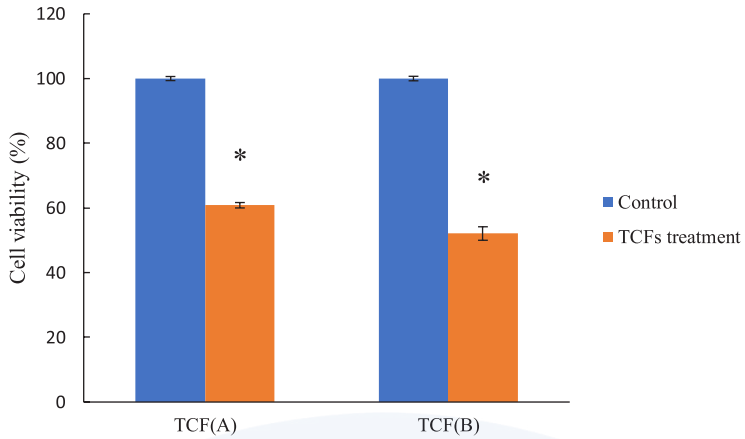
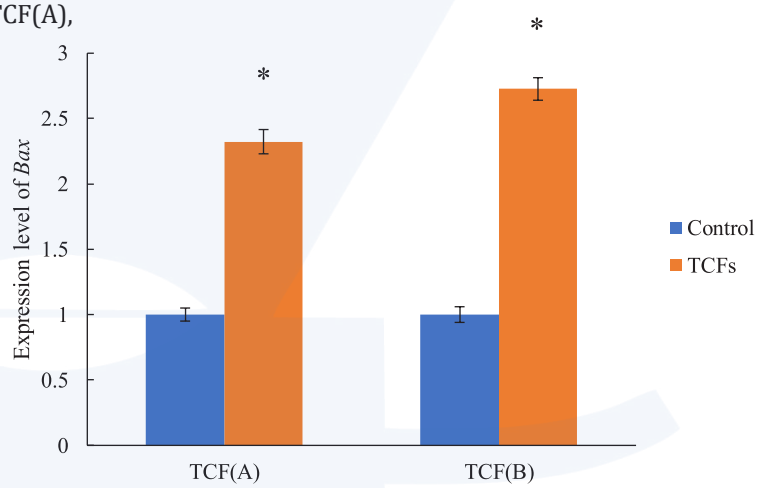


Figure 1 . Cell viability of TCF (A) and TCF (B) treated groups compared with the control. The asterisk shows a statistically significant difference (p <0.05) between the experimental and control groups.

RT Real-time PCR

This study showed the change in the expression of *Bcl-2* and *Bax* genes and the ratio of *Bax*/*Bcl-2* in TCF (A) and TCF (B) treated HT29 cells. The expres-sion of the Bax gene was increased in both TCF(A), and TCF(B) treated cells compared with control (Figure2, a). The Bcl-2 expression was significantly decreased in both TCFs groups (p<0.05; Figure2, b). *Bax*/*Bcl-2* ratio was significantly increased in the TCFs treated cells (p<0.05; Figure2, c).

a



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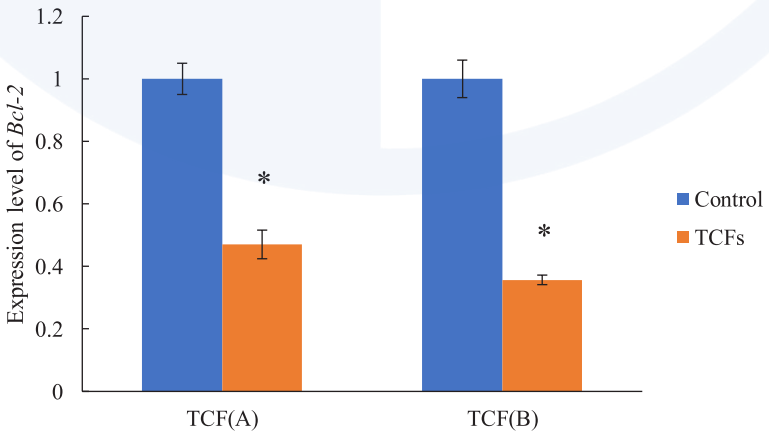

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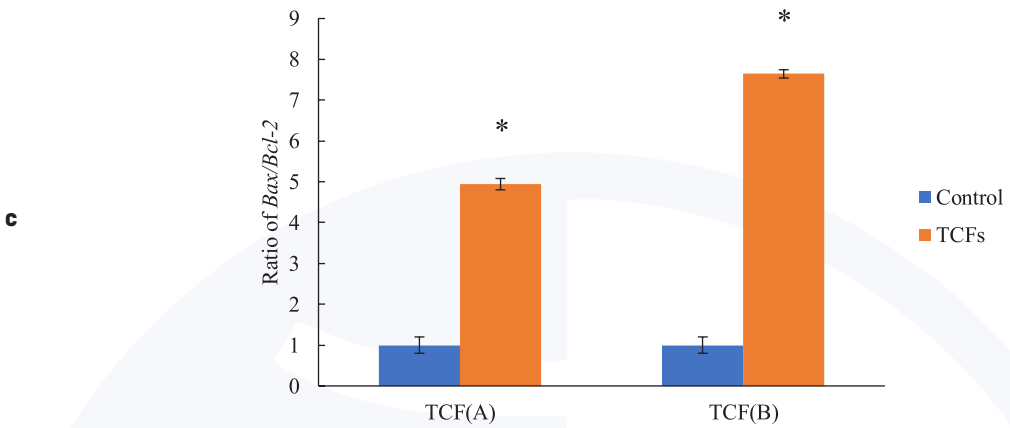

Figure 2 . The expression of *Bax* (a) and *Bcl-2* (b) and the ratio of *Bax*/*Bcl-2* (c) in TCF (A) and TCF (B) treated cells compared with control. The asterisk displays a significan difference between the TCFs groups and the control (p <0.05).

Discussion

In the present study, TCF (A) and TCF (B) considerably influenced the number of cells and morphology of HT29 human colon cancer cells. In the trypan blue staining assay, more dead cells were counted in the TCFs groups compared with the control. This may indicate an inducing effect of the TCFs on the death of HT29 cells. In the MTT assay, both TCFs decreased the viability of cells at the mentioned incubation times ($p< 0.05$).

The Bcl-2 family members have a critical role in the regulation of death or survival of the cells. Chemotherapeutic agents partially affect the expression of numerous members of the Bcl-2 family in cancerous cells. The members of the Bcl-2 family contribute to apoptosis through activation (*Bax*) or inhibition (*Bcl-2*) genes (Green et al., 1998, Rao et al., 1997).

The expression of *Bcl-2*, *Bax* genes, and the *Bax*/*Bcl-2* ratio was evaluated in the present study. The results showed that *Bax* gene expression increased and *Bcl-2* gene expression decreased in both TCF (A) and TCF (B) groups compared to the control. The ratio of *Bax*/*Bcl-2* is an indicator for determining cell susceptibility to apoptosis and helps the determination of cell destiny (Gross 2001). *Bax*/*Bcl-2* ratio increased 4.9 and 7.6-fold compared to control via TCF (A) and TCF (B), respectively ($P<0.05$) which shows apoptosis induced by both TCFs significantly.

The effect of Faradarmani CF on MCF7 cells was assessed in a previous study. The Faradarmani CF was announced every hour until the end of the experimentation at 6, 18, and 24 hours from the initial start time. The viability of cells was assessed by MTT assay. The expression of *Bax* and *Bcl-2* genes was as-sessed via RT Real-time PCR technique in the M CF- 7 breast cancer cells. Faradarmani CF significantly
increased the proliferation of the MCF-7 cells (18%) in comparison to the control in a time-dependent manner. Furthermore, in the cells treated with Faradarmani CF, the ratio of *Bax*/*Bcl-2* was decreased (1-fold), compared with the control suggesting a higher MCF7 cell survival and resistance to death (Taheri et al., 2020a).

The influence of TCFs on cancer cells seemingly displays different results. Both of TCFs showed a significant anticancer effect; however, the effects of TCF(B) were greater than TCF(A) in all experiments. It is necessary to further study of TCFs and perform laboratory tests in a variety of areas. Therefore, extensive studies in vitro and in vivo are needed to evaluate the efficacy of TCFs on cancer, and further studies are recommended.

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Conflicts of Inte est

The authors declare no conflict of interest.

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Effect of Faradarmani Consciousness Field on proliferation, telomerase activity, and telomere length of the human mesenchymal stem cells

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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.*

ABSTRACT

Taheri Consciousness (T-Consciousness) was introduced and defined by Mohammad Ali Taheri as one of the constituent components of the Cosmos in addition to matter and energy, from which Taheri Consciousness Fields (TCFs) are derived. TCFs are not matter or energy, but they can be proven by scientific experiments. The effect of Faradarmani CF, as one of TCFs, was examined in this study. Telomerase is an important enzyme, which adds DNA sequence repeats to the ends of chromosomes, thus prevents from their shortening. Telomerase activity is associated with cell proliferation, organism growth, and aging. This study aimed to study proliferation, telomer-ase activity, and telomere length in the Faradarmani CF treated mesenchymal stem cells (MSCs). Human MSCs were isolated from bone marrow and the morphology, proliferation of cells, length of telomere, and activity of telomerase were evaluated in Faradarmani CF treatment and control groups. The results showed that Faradarmani CF significantly increased the proliferation, length of telomere, and activity of telomerase in hMSCs compared with the control group ($p < 0.05$). Considering the effects of Faradarmani on telomere length and telomerase activity, which are two important factors for cures of several age-related diseases, it is recommended that more experiments be performed in this regard to clarify the effect of TCFs on aging.

Keywords: Taheri Consciousness Fields, Faradarmani Consciousness Field, telomerase activity, telomere length, mesenchymal stem cells

INTRODUCTION

The Discovery of the telomere's structure and accurately describing their functions was an important achievement in molecular medicine and especially in gerontology (Blackburn, 2001, Kim et al., 2002). To date, several experimentations and data from long-term medical investigations have confirmed the validity of the telomere theory of aging that associates life expectancy and the progress of age-related diseases with telomere length (Calado et al., 2012, Hoen et al., 2011, Martin-Ruiz et al., 2005, Zglinicki et al., 2005). A reverse association has been found between telomere length with various forms of cancer (Broberg et al., 2005, Bagheri et al., 2006), renal failure (Boxall et al., 2006, Ramírez et al., 2005), cardiovascular disease (Demissie et al., 2006, Zhan et al., 2019), Parkinson's disease (Maeda et al., 2012), and Alzheimer's disease (Cai et al., 2013). In most cases of these diseases, a direct relationship has been found between the shortening of telomere and a constant high level of oxidative stress (Wolkowitz et al., 2011, Spivak et al., 2016).

Stem cells (SCs) are undifferentiated cells that are capable of extensively proliferating (self-renewal) and differentiating into many cell lines in the body. The high differentiation potentials of human mesenchymal stem cells (hMSCs) suggest that any change in their proliferation and metabolism may have unexpected results (Brown et al., 2019). Therefore, it seems that hMSCs can be suitable models and reference cells for evaluating the results of Faradarmani CF in biological systems.

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. TCFs 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 evaluated the effect of Faradarmani CF on the proliferation of stem cells along with their telomerase length and activity.

Methods and Materials

Application of the TCFs

TCFs were applied to the samples according to the protocols regulated by the 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.

Isolation and cultivation of mesenchymal stem cells

Human MSCs were isolated from a bone marrow sample of a volunteer female donor (25 years old) after obtaining informed consent. To put it briefly, the sample was washed with sterile phosphate buffer solution (PBS) to remove debris and red blood cells. The sample was treated with 0.075% type I collagenase in PBS for 30 min at 37°C under alternative shaking. Then, collagenase I was neutralized with an equal volume of Dulbecco's Modified Eagle's Medium (DMEM) and 10% fetal bovine serum and centrifuged at 800×rpm for 10 min. The cell pellet was dissolved and cultured on the DMEM high glucose medium, 10 % FBS, and 1% penicillin/streptomycin. After 24h cultivation, non-adherent cells were discarded, and adherent cells were washed twice with PBS. After 80% confluency, the cells were passaged. After two passages, hMSCs were cultured on 6 well plates and kept in an incubator at 37°C and 5%CO_2.

Cell count and telomerase tests

The morphology and number of cells were evaluated 24 hours after cultivation. After 4 days, the cells were examined with a reverse microscope for any contamination and cellular density. When no contamination was observed and the cells reached the appropriate density, cells were passaged. After trypsinization, the number of cells was counted on the Neobar slide. One ml of suspension was used to evaluate the activity and length of telomerase.

DNA and RNA extraction

DNA and RNA extraction were performed using a Cinaclon kit (SinaClon, Tehran, Iran) according to the manufacturer's protocol. Briefly, after the fourth and fifth passages, hMSCs were incubated by lysis buffer (10 mM EDTA pH 8.0, 10 mM Tris pH 8.0, 100 mM NaCl, SDS 0.5% w/v, 100 mg/ ml proteinase K) for 1.5 h at 37 ° C. After inactivation of proteinase K by incubation at 75 ° C for 15 min, it was treated with 5 µl Rnase A (10 mg/ml) then centrifuged and the supernatant was transferred to a new microtube. An equal volume of phenol: chloroform (1: 1) was added to the liquid and mixed thoroughly. Then, the supernatant was transferred to a new tube, and finally, the ethanol precipitation method was performed to isolate the genomic DNA.

RNA extraction was performed via Favor-Prep Blood/Cultured Cell Total RNA Mini Kit (Favorgen) according to the protocol of the manufacturer. The concentration of RNA was measured by means of a NanoDrop spectrophotometer (ThermoFisher) and stored at -70 °C.

Real-Time PCR

Real-time PCR was used to measure the telomere length and telomerase activity in MSCs. To measure cell telomere length, real-time PCR was performed according to the standard protocol. The master mix kit used was the Takara kit from (Japan). Real-time was performed with a probe against 6B4 (a single-stranded gene encoding the ribosomal acid phosphoprotein PO on chromosome 12) in 30 cycles with

Applied Biosystem (USA) 7500. Tel-F sequence 5-GGTTTTTGAGGGTGAGGGTGAGGGTGAGGGTGAGGGT-3 and Tel-R 5-TCCCGTATCCCTATCCCTATCCCTATCCCTATCCCTA-3 and 36B4-F sequence 5-CAGCAAGTGGGAAGGTGTAATCC-3 and 36B4-R sequence 5-CCCATTCTATCATCAACGGGTACAA-3 primers were used. The T / S (relative length of primer) ratio was obtained by division of the CT values (Thermal cycle) of telomere and 36B4 genes over each other. In addition, the TRAP protocol based on real-time PCR was used to measure the activity of the telomerase enzyme.

Statistical analysis

Data were analyzed by statistical analysis software (SPSS version 21). Data are presented as mean and standard deviation. A student t-test was used for comparing the differences between normally distributed variables. A P-value < 0.05 was considered statistically significant.

Results

Results of MSCs culture

An average of cell numbers of mesenchymal stem cells in 6 wells was counted in the control group after 24 h, while in the treatment group, this cell count was significantly increased by 20 percent more than the control group ($p<0.05$) and the cells were wider in the control group. Moreover, in the treatment group, MSCs were detached in less time during trypsin-versene passage than in the control groups.

Results of telomere length and telomerase activity

As shown in Table 1, the effect of Faradarmani CF on the telomeres length of MSCs and the telomerase activity was statistically significant compared to the control group (Table 1). Faradarmani CF increased telomeres length and the telomerase activity of MSCs significantly ($P <0.05$).

Table 1 . Telomere length and telomerase activity in the control and treatment groups under the influence of Faradarmani CF

Variables	Treatment group	Control group	p-value
Length of telomere	1.84±0.03	1.64±0.07	<0.05
Telomerase activity[a]	0.10±0.005	0.09±0.002	<0.05

Data are presented as mean ± standard deviation.
[a]Telomere activity was assessed based on Ct-values.

Discussion and conclusion

The aging and age-related diseases are extensively associated not only with medication but also with psychological interventions (Epel, 2012), including proper diet, self-control (Farzaneh-Far et al., 2010), and mental and physical training to increase the telomerase activity in non-tumor cells and thus counteract age-related telomere shortening and decreased telomerase activity. These are the

critical health principles that form a good way to have a long and healthy life (Spivak et al., 2016).

The present study showed that Faradarmani significantly increased proliferation, telomeres length, and the telomerase activity of hMSCs ($P < 0.05$). Telomere length and telomerase are two important markers that are rapidly gaining importance as targets for cures of several age-related diseases, which Faradarmani CF has an effect on it, as demonstrated in this study.

As was mentioned in the introduction section, TCFs as non-material and non-energetic fields can be applied to all living and non-living beings, including plants, animals, microorganisms, etc. Although we cannot measure TCFs quantitatively, it is possible to investigate their effects indirectly through various experiments.

In previous studies we observed the effects of 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 under salinity stress (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 (Taheri et al., 2020b). The present research was the first study on the effect of Faradarmani on telomerase activity and telomere length in vitro so additional research on the other cells, animals, also aging, and the development of age-related diseases is required to better investigate the issue.

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Conflicts of Inte est

The authors declare no conflict of interest.

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Screening the Effect of Faradarmani Consciousness Field on the Ex vivo Controlled Microenvironment on Solid 4T1 Tumors

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ABSTRACT

Personalized cancer medicine is currently focused on knowledge of the cancer mutation repertoire and the tailored application of drugs that targets altered genes or pathways in individual patients. Thus, a critical need exists for more sophisticated ex vivo diagnostic methods that recapitulate human tumor biology and predict response to the targeted and immune-based therapies in real-time. Taheri Consciousness Fields are immaterial, and non-energetic fields and their influence on the world of matter and energy has been observed in several biological and physical studies. In the present study, we developed a 3D Microfluidic controlled microenvironment device that consists of two media channels parallelly running. They are located on either side of an extended, central region, containing the tumor cell spheroids embedded within an extracellular matrix. In these conditions, we investigated the influence of Faradarmani Consciousness Field (CF) on this 4T1 cell line. According to the results, under the influence of the Faradarmani CF treatment, the 4T1 cell line showed a significant increase in survival compared with the control groups.

Keywords: ex vivo, microfluidi , cell line, cancer, Taheri Consciousness Fields, Faradarmani Consciousness Field

INTRODUCTION

Cancer is a prominent cause of death worldwide, accounting for nearly 10 million deaths in 2020 (Sung et al., 2021). The risk factors like genetic background, environmental stresses, and improper diet generally lead to molecular changes or mutations which cause the initiation of carcinogenesis (Padma, 2015). In malignant tumors, metastasis poses the biggest problem for cancer treatment. It has been hypothesized that the epithelial to mesenchymal transition (EMT) is an important event in the metastatic cascade. EMT is involved in the generation of tumor cells with stem cell properties and resistance to certain therapeutic interventions (Bullock et al., 2012, Nieto et al., 2016, Lambert et al., 2017). Therefore, it has been considered a viable therapeutic target to combat metastatic disease (Kalluri and Neilson, 2003). Spotting a primary tumor before metastasis is crucial. However, physical examination and traditional imaging methods like MRI, PET, CT, and X-ray have a detection limit for smaller metastasis (Van Dalum et al., 2012). In a patient with solid tumors, Circulating Tumor Cells (CTCs) can be found in the blood, so biomarkers may provide a way to monitor disease progression more directly than traditional imaging methods (Van Dalum et al., 2012, Yang et al., 2019). CTCs hold information about a tumor that could be a key to the cancer diagnosis or treatment (Williams, 2013).

Chemotherapy as an important treatment for cancer patients has some limitations, including a lack of selectivity for tumor cells over normal cells, systemic toxicity, and the appearance of drug-resistant tumor cells (Xu and McLeod, 2001). Numerous therapeutic strategies have been focused on drugs that target altered genes or pathways in individual patients. For example, Kristen Rat Sarcoma viral oncogene (KRAS) is one of the earliest oncogenic drivers, so inhibition of KRAS may be a viable therapeutic strategy for this disease (Muzumdar et al., 2017, Uras et al., 2020). A variety of in vitro approaches have been used in cancer biology and drug discovery. However, in vitro models do not entirely reproduce the cellular diversity and complexity of interactions in tumor niches (Bellido et al., 2020). Two-dimensional (2D) cell culture has many limitations, such as disturbance of interactions between the cellular and extracellular environments, changes in cell morphology, polarity, and method of division (Kapałczyńska et al., 2018). It has been reported that around 95% of new anticancer drugs eventually fail in clinical trials, despite robust indications of activity in existing in vitro pre-clinical models (Hickman et al., 2014).

Recent advances in the microfluidic cell or tissue culture technology can be used as a novel in vitro drug screening method with high-throughput applications (Tsui et al., 2013,) and the development of “organs on chips”, enables experimentalists to recapitulate the multicellular architecture, tissue-tissue interfaces and the physiologically relevant physical microenvironment of cancers growing within living human organ while sustaining vascular perfusion in vitro (Sontheimer-Phelps et al., 2019). Using 3D culture, the inhibition of KRAS-driven tumorigenicity by interruption of an autocrine cytokine circuit was investigated and identified concurrent inhibition of the TBK1/IKKε, Janus-activated kinase (JAK), and MEK signaling as an effective method to inhibit the actions of oncogenic

KRAS (Zhu et al., 2014). A study, screening the therapeutic EMT blocking agents using 3D microfluidic systems, showed that there are significant differences in response to drugs between 2D and 3D and between monoculture and co-culture (Aref et al., 2013). In addition, Jenkins et al., 2017 and Aref et al., 2018 evaluated tumor-immune interaction in 3D culture using patient- or murine-derived organotypic tumor spheroids (MDOTS/PDOTS). Their research showed that this platform can model response to the PD-1 blockade and facilitate precision immune-oncology efforts and ultimately personalized immunotherapy.

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. TCFs 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 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 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.

Previously, in two experiments, the effects of Faradarmani CF on the survival and death of the MCF-7 breast cancer, and the mice 4T1 breast cancer model were investigated. Obtained results demonstrated that Faradarmani CF induced cell proliferation and survival in MCF-7 (Taheri et al., 2020a), and in mice, 4T1 model Faradarmani CF inhibited the growth of cancerous masses and metastasis (Submitted). In addition, the nature of TCFs in comparison with the magnetic field has been investigated, and found that the magnetic properties of the materials under the influence of the three distinct TCFs changed significantly (Taheri et al., 2021). Furthermore, the effects of TCFs on in vivo and in vitro models of Alzheimer's disease (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., 2021), bacterial population growth (Taheri et al., 2021d), viral growth (Taheri et al., 2021e), and the electrical activity of the brain during Faradarmani (Taheri et al., 2020b) were studied previously. The aim of this study in addition to the reproducibility of previous results on cell lines was to investigate the effect of Faradarmani CF on 4T1 cell lines under ex vivo conditions to study the effect of the three-dimensional culture conditions on cell behavior in the presence of Faradarmani CF.

Methods and Materials

Application of Faradarmani CF

TCFs were applied to the samples according to the protocols regulated by the 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 medi-

cine and psychology, involving theoretical and practical testing.

2D cell culture

The 4T1 cell line was cultured in a humidified atmosphere with 5% carbon dioxide at 37°C in Dulbecco modified Eagle medium/Nutrient Mixture F-12 Ham supplemented with 10% fetal bovine serum and 1% penicillin/streptomycin 10,000 U/mL.

Spheroid preparation

The adherent cells were grown to 80% confluence. Monolayers were rinsed twice with PBS. After draining well, 2mL (for 100 mm plates) of 0.05% trypsin-1 mM EDTA was added and incubated at 37°C until cells detach. Next, the detached cells were transferred to a 15mL conical tube and centrifuged at 1200 rpm for 5 mins. Then, the cell pellet was resuspended in a 2mL complete culture medium, and the cells were counted. Using a pipette, 20 µL of cells were deposited on an inverted lid from a 100mm tissue culture dish. The lid containing 45 deposited cells was inverted in the PBS-filled chamber at 37°C under 5% CO_2 and 95% humidity and was monitored and incubated until the aggregates were formed. After 24h of incubation, drops were washed by the medium from the lid and centrifuged in a conical tube at 1200 rpm for 5 mins to obtain a spheroid pellet.

3D cell culture (day 0)

In order to achieve the proper fractions (40-100 µm), spheroids were filtered by 100 µm and 40 µm cell strainers respectively and centrifuged at 1200 rpm for 5min. Subsequently, cell pellets were resuspended in collagen hydrogels (type I rat tail collagen 2.5mg/ml, Corning Co.). Hydrogels containing spheroids were injected into the central channels of 3 (A, B, C) microfluidic devices and incubated for 30 min at 37°C in humidified chambers. Microfluidic chips were designed by and manufactured at AIM BIOTECH (DAX-1, AIM BIOTECH, https://www.aimbiotech.com/). We used 3 devices for each sample as three replications for the experiments (3 for A, 3 for B, and 3 for C). Hydrogels were hydrated with DMEM/F12 + 10% FBS + 1% pen/strep and incubated at 37°C for 24 hours.

Treatment of the spheroids (day 0 to day 3)

A (control: DMEM + FBS + pen/strep), B (treatment), and C (control: doxorubicin) were placed in different places in the incubator.

Live /dead assay

Spheroid viability was evaluated after staining with AO/PI (Nexcelom ViaStain™ AO/PI staining solution (Nexcelom, CS2-0106) according to the manufacturer's protocol on day 3.

Imaging of spheroids and data analysis

Spheroids were imaged on an inverted Nikon Eclipse Ti microscope equipped with a Nikon DS-Qi1Mc camera using NIS-Elements software. The total area of Acridine orange-stained live (green) cells versus Propidum iodide-stained dead (red) cells was quantified.

Results

To evaluate the effects of the treatment on 4T1 spheroids in microfluidic devices, live and dead cells were counted in fluorescent images from

cells in groups A (DMEM-treated cells), B (treated cells), and C (Doxorubicin-treated cells as positive control) on day 3 of the study. The results showed that the percentage of live cells in group B was significantly more than in groups A and C. In other words, treatment slightly improved the viability of the cells. Figure 1. presents the images and the graph.

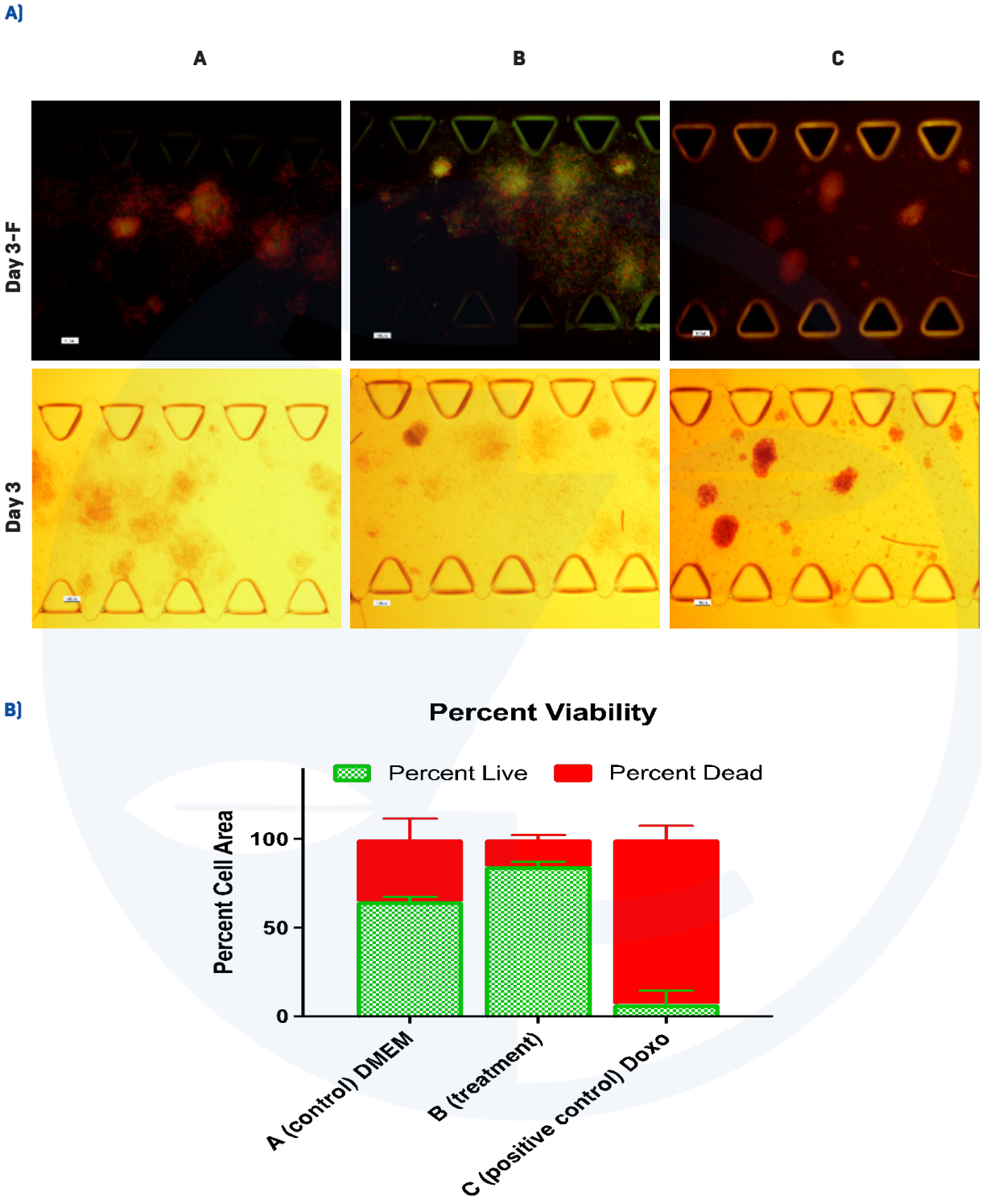

Figure 1. percentage of cell viability on day 3 of the study. A) Optical and fluo escent Images from the spheroids on day 3. Green: live. Red: dead. Scale bars: 100µm. A: DMEM-treated cells (as control), B: Treated cells, C: Doxorubicin-treated cells (as positive control). B)

Discussion and Conclusion

This preliminary study investigated the effect of a Faradarmani Consciousness Field on the growth of a cancer cell line under ex vivo conditions. The results of this study affirmed the findings of the observations made on the in vitro MCF7 culture (Taheri et al., 2020a). The 4T1 cell line of this study shows a significant increase in survival compared to controls. According to Taheri, Faradarmani CF can optimize the system under the study, and this upgrade is due to the function of the target system, and its nature. Due to the independent nature of cancerous cell lines of the cancer cells in the body of living organisms, cancer cell lines have been inclined to their nature and optimized under the influence of Faradarmani CF. Further research is ongoing in this team to examine the primary cancer cells in the same conditions of this study and study the molecular and immunological changes of cells in both cancerous cell lines and primary cancer cells in the face of Faradarmani Consciousness Field.

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Effect of Faradarmani Consciousness Field on the Mice 4T1 Breast Cancer Model

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ABSTRACT

The use of complementary and alternative medicine along with conventional methods of chemotherapy and radiation therapy, with the aim of cancer prevention and treatment, has been investigated and validated in various preclinical and clinical studies. Meanwhile, in contrast to the widespread use of medicinal plants and other complementary and alternative medicine methods in the preclinical trials with animal models of cancer, as an important step confirming the safe and effective use in humans, similar studies in the field of mind-body modalities are rarely examined. A new treatment method founded and introduced by Mohammad Ali Taheri provides a different type of consciousness (Taheri Consciousness Fields) that is neither matter nor energy. The effectiveness and capability of this new complementary and alternative medicine were examined in this study, and the effectiveness of one of Taheri Consciousness Fields (TCFs) named Faradarmani, was investigated in the 4T1 orthotopic breast cancer spontaneous metastasis Balb/c mouse model. According to the results, the Faradarmani CF treatment, during tumor progression, had a significant effect on inhibiting the growth of cancerous masses and preventing metastasis in the mice animal model under the study. Moreover, this treatment had a reproducible and significant positive effect on survival behavior and natural vital functions of the treated mice in comparison with the untreated control group.

Keywords: Faradarmani; Taheri Consciousness Fields; Cosmic Consciousness Network; breast cancer; 4T1 model; complementary and alternative medicine

INTRODUCTION

Cancer is one of the leading causes of death in the world. According to the World Health Organization (WHO), in 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. Breast cancer is one of the world's most prevalent cancer diseases with high incidence rates in all countries (Ganz et al., 2015). After coronary heart disease and accidents, cancers are the third cause of death in Iran (Mousavi et al., 2009; Farhood et al., 2018). Metastasis represents the most destructive stage of cancer in which it is difficult to remove tumors as well as treat cancer. For solid tumors, about 66.7%of cancer deaths were registered with metastases as a contributing cause (Dillekås et al., 2019). Thus, understanding the biology of metastases and accurate diagnosis in the early stage is a promising strategy to reduce cancer mortality.

Many patients with cancer use complementary and alternative medical (CAM) therapies and about 50% already use CAM alongside cancer ther-apy (Ciarlo et al., 2021). Given the high prevalence of CAM use in patients, more research is required to determine whether they are efficacious. Among CAMs, various mind-body therapies have also been used for disease prevention, immune system enhancement, and symptom control by cancer survivors (Mayden, 2012).

According to the guidelines of WHO, in order to evaluate the effectiveness of any treatment for various human diseases, it is first necessary to conduct preclinical studies in cellular labora-tory conditions (*In-vitro*) and in animal models (*In-vivo*). In the field of cancer research, the use of animal-based research can be a valuable tool for the preclinical investigation of anti-cancer therapeutics and cancer prevention. The mouse has been the traditional animal model for basic and preclinical studies of cancer (Yee et al., 2015). The breast carcinoma 4T1 cell line is an appropriate candidate for studying the processes of metasta-sis and understanding its molecular mechanisms (Aslakson et al., 1999). Mouse breast cancer has been used to investigate the effects of a variety of complementary and alternative medicine techniques, such as Therapeutic Touch (Gronowicz et al., 2015) and largely in herbal medicine (Chen et al., 2007; Xu et al., 2011). The use of animal models for evaluating the effectiveness of conventional methods of mind-body therapy, such as meditation and mindfulness is impossible, due to the necessity for the active role of the recipient of the treatment.

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.

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

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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. The present study was aimed to investigate the effects of Faradarmani, as a suggested complementary and alternative medicine approach on the 4T1 mice model of breast cancer.

Materials and Methods

Faradarmani CF (FCF) application

TCFs were applied to the samples according to the protocols regulated by the 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 this research, two groups (mentioned in the 3.1 section) were connected to CCN daily for 4 weeks.

Cell Allograft Metastasis Mouse Model

The 4T1 Cell Culture and Harvest

4T1 mouse mammary tumor cells were cultured in RPMI 1640 medium containing 10% fetal bo-

vine serum (FBS), 100 units/mL of penicillin, and 100 µg/mL of streptomycin in a humidified atmosphere containing 5% CO_2 at 37 °C. Then, the cells were collected, and after centrifugation; they were calculated by Neo-Bar lam (Yang et al., 2012)

Tumor cell injection into mice

Simultaneously with the previous step, twenty 6–8 weeks female Balb/c mice were obtained from the Faculty of Veterinary Medicine, Urmia University, and kept under standard laboratory conditions until the 4T1 cancer cells (triple-negative mouse breast cancer (PR-, ER-, HER-) were prepared for injection. 1x104 cells were inoculated into the back of each mouse subcutaneously. Fourteen days after injection, tumor nodules were observed in the back of the mice (Figure 1).

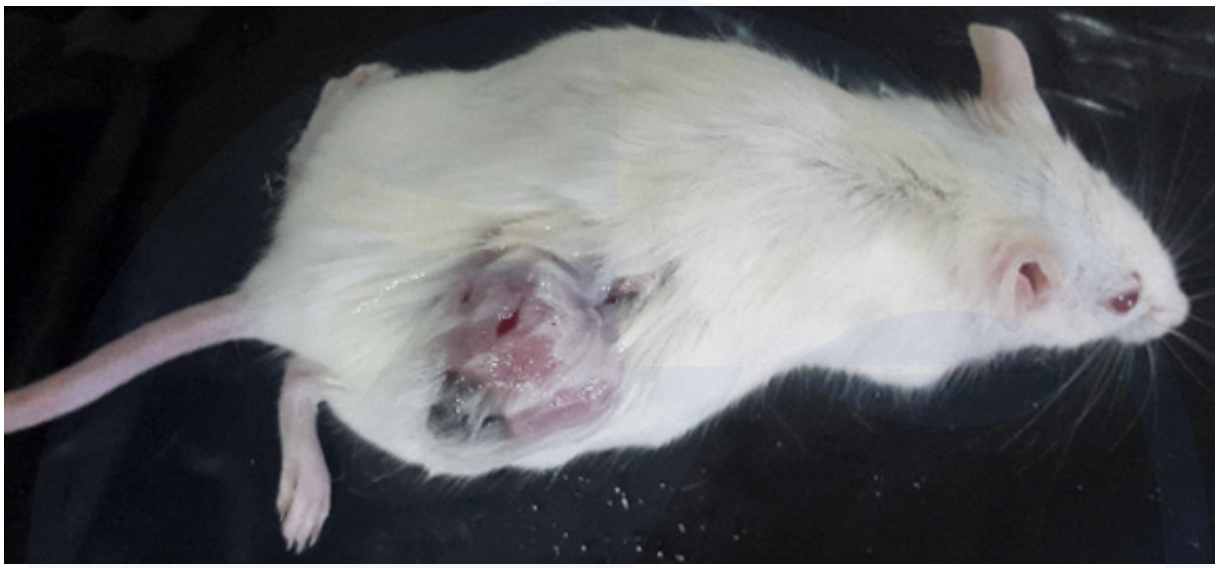

Figure 1. The cancer mouse model, 14 days after the 4T1 cell injection.

There were four groups (n= 5 mice), including the negative control, the cancer FCF pretreatment group, the cancer FCF post-treatment group, and the cancer control group. More explanation is mentioned in the first part of the result section.

Histology of tumor cells and selected organs

Tumor, Liver, and spleen samples were harvested and fixed in 10% neutral buffered formalin for 48 h, processed routinely, after which the tissues were embedded in paraffin, sectioned onto slides, and their morphologies were observed using hematoxylin and eosin (H&E) staining (Hou et al., 2011).

Results

Tumor size in each group

Four groups are mentioned below, and an image of one member of each group is presented in Figure 2. Moreover, the tumors sizes of groups 2 and 3 are illustrated in Figures 3 and 4, respectively.

- **Group 1-** five mice without any injection (as the negative control group) (Figure 2a).
- **Group 2-** five mice received 1x104 4T1 cells subcutaneously and at the same time were influenced by FCF (as a pretreatment sample group which is getting cancer – the model of the preventive effect of FCF) (Figure 2b).
- **Group 3-** five mice received 1x104 4T1 cells subcutaneously, and after 14 days, were influenced by FCF (as a sample group that received cancer and then treated- the model of the cor-

rective effect of FCF) (Figure 2c).

● **Group 4-** five mice received 1x104 4T1 cells subcutaneously without the FCF treatment (as the cancer control group) (Figure 2d).

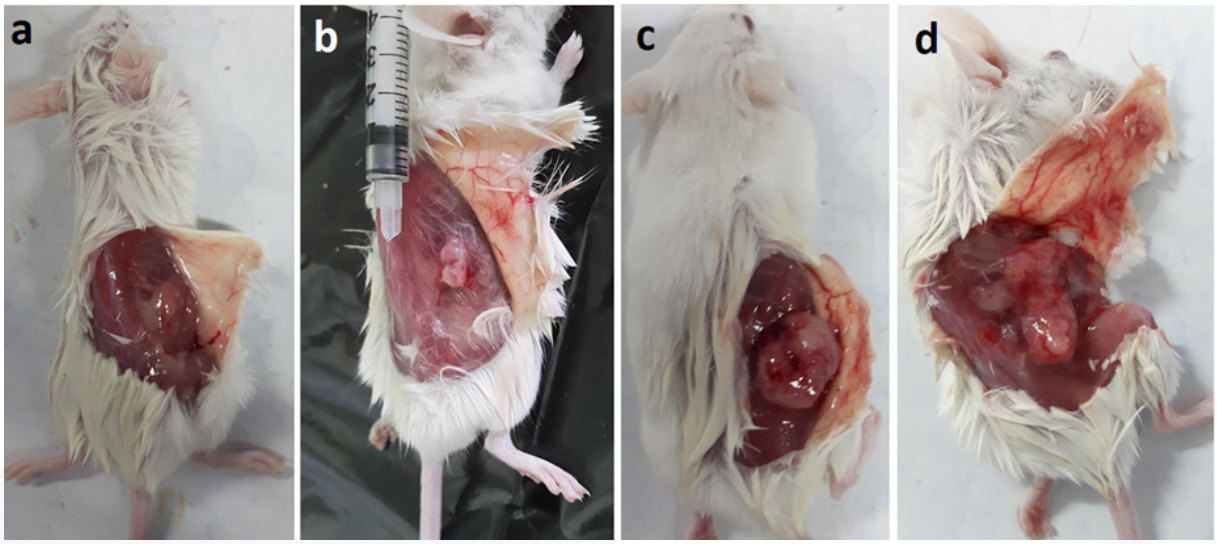

Figure 2. Dissection of one member of each group of the study. (a) The control mouse model. (b) The mouse model receiving cancer, and at the same time influenced by FCF treatment (c) The mouse model received cancer, and then influenced by FCF (d) The mouse model received cancer without FCF treatment.

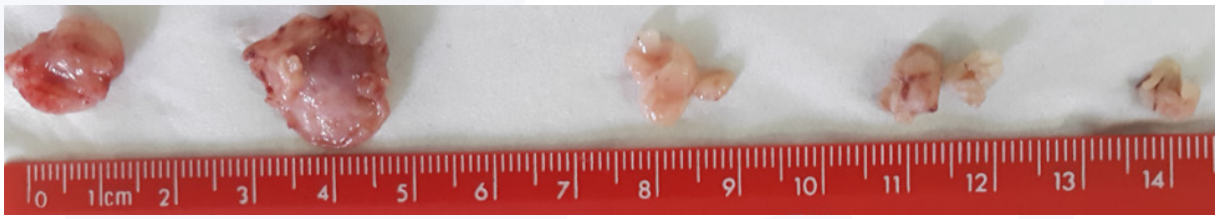

Figure 3. The size of tumors in group 2 (pretreatment model of the FCF application).

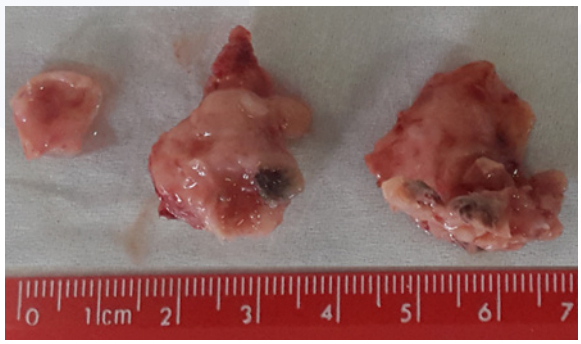

Figure 4. The size of tumors in group 3 (post-treatment model of the FCF application).

After surgery, the weight, size, and volume of tumors in the three groups (2, 3, and 4) were measured and compared with each other (Table 1). The data showed that the tumor volumes and weights of treated mice in the preventive approach (group 2) decreased significantly in comparison with the positive control mice (group 4) by about 95% and 75%, respectively. Moreover, according to the data, there is no significant difference in the size and weight of tumors in group 3 (the FCF post-cancer treatment), and group 4 (cancer without treatment).

Table 1 . Average size, volume, and weight of tumors in different mice groups of this study.

Groups	Average size/mM (length * width * diameter)	Average volume / mM^3	Volume range /mM^3	Average weight /gr	Weight range/gr
2	10.2*8.2*0.76	63.56	2.4-459	0.38	0.04-0.7
3	18.1*16.3*3.6	1062	180-2622	1.42	0.21-2.1
4	19.2*17.1*3.5	1149	94.5-2990	1.51	0.46-2.4

Histology of tumor mass, liver, and spleen in each group

Microscopic slides of tumor mass, liver, and spleen cross-sections in each group of the present study can be seen in Figures 5, 6, and 7, respectively. In confirming and completing the results of the previous section, the histologic analysis showed the development of the tumor in the FCF pre-treated, and the FCF post-treated mice (Fig. 6) with remarkable differences in size.

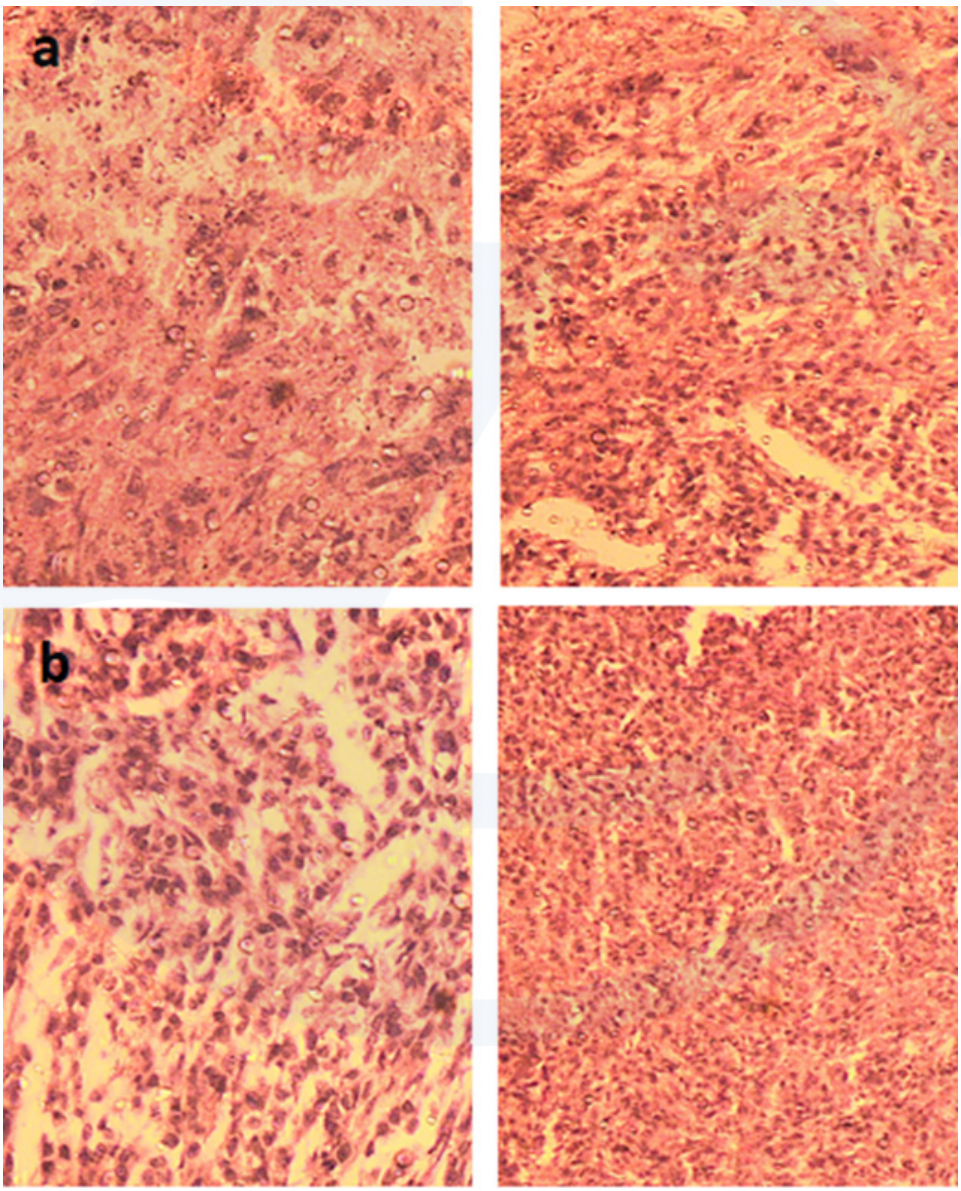

Figure 5. Microscopic slides of tumor mass in group 2 (a) and group 3 (b) in BALB/c mice. The images present an original magnification of x200. Scale bar, 100–200 µm.

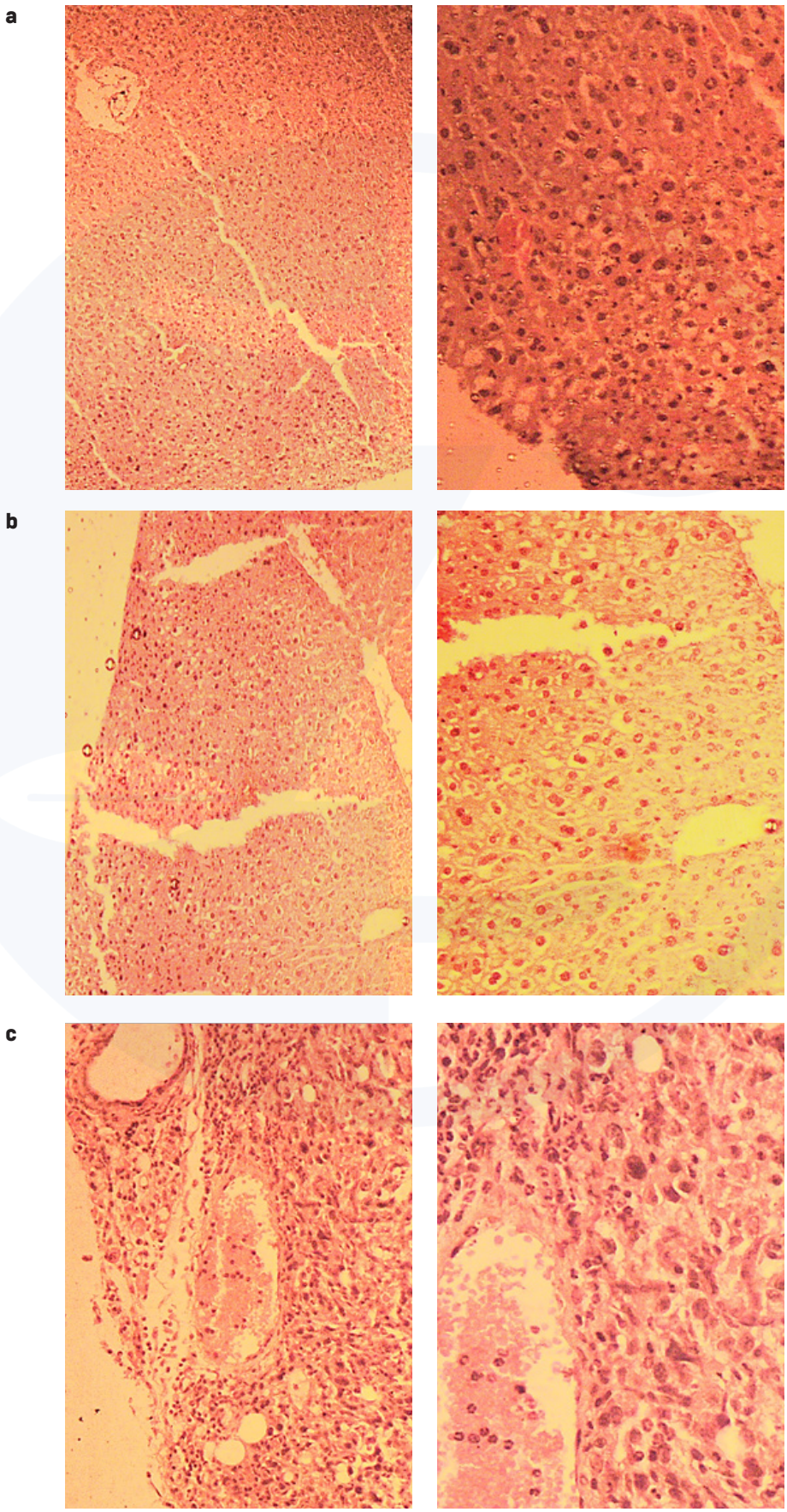

Figure 6. Microscopic slides of the liver in control (a), group 2 (b), and group 3 (c) in BALB/c mice. Scale bar, 100–200μm.

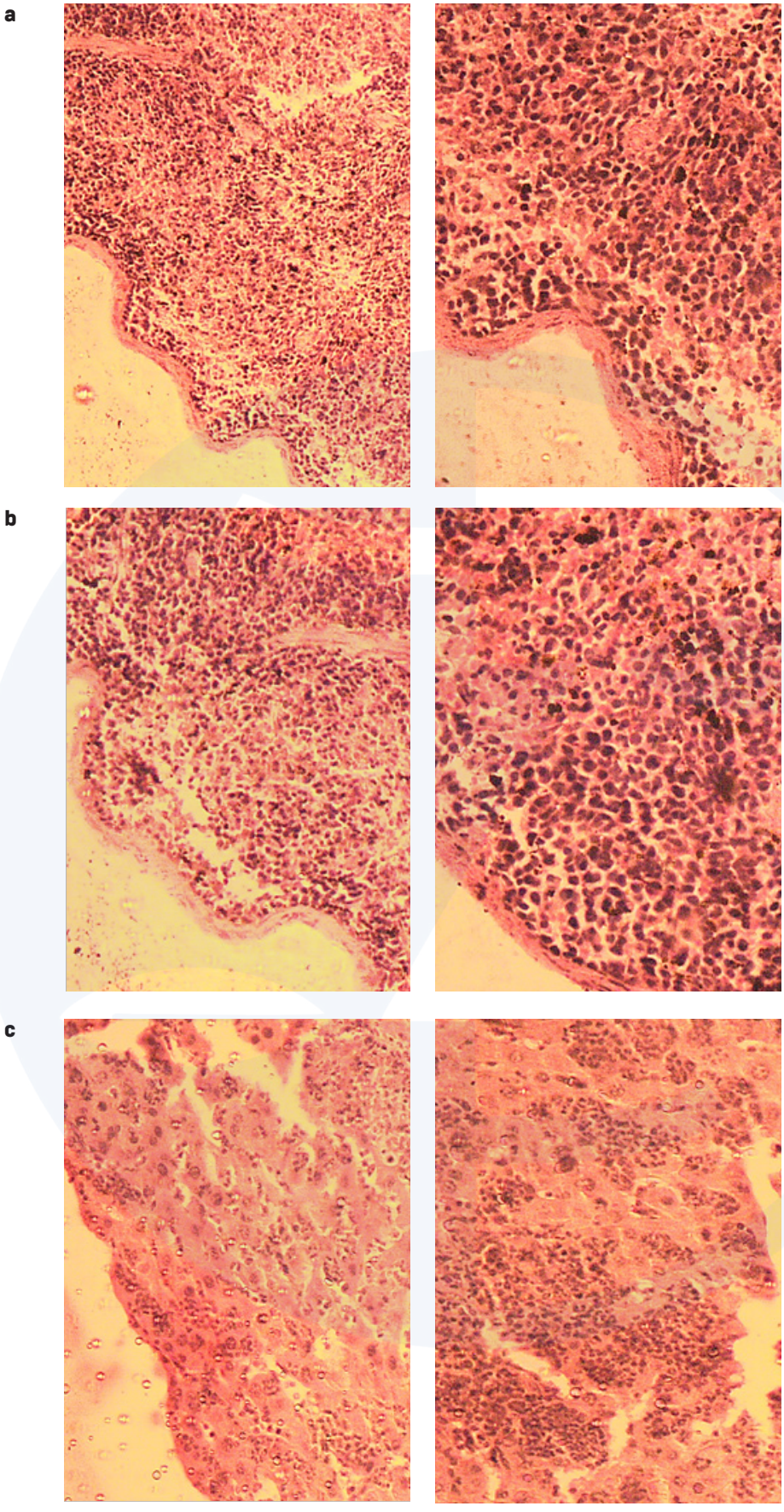

Figure 7. Microscopic slides of the spleen in control (a), group 2 (b), and group 3 (c) in BALB/c mice. Scale bar, 100–200 μm

As can be seen in Figures 6 and 7, the FCF post-treated mice, in addition to tumor formation and enlargement, showed liver and spleen metastases, which was similar to group 4 (cancerous mice, untreated with FCF). However, FCF pre-treated mice had less tumor growth, and their livers and spleens were similar to healthy mice (control group). In other words, the livers, and spleens of the FCF pre-treated mice were not involved with the breast tumors.

Survival and behavior of mice

It was observed that two of the five mice in group 3 died before the end of the FCF treatment and the rest of them still had tumor burden, but with re-duced tumor size. In contrast, the mice in group 2, had no evidence of disease and all five animals were alive. It was observed that one mouse in each control group (1 and 4) died. Interestingly, the only group without any death was group 2, in which pre-treatment with FCF resulted in sig-nificant improvement in the survival of treated animals. After surgery, it was found that not only the tumor sizes in groups 3 and 4 were remark-ably larger than in group 2, but also a significant increase in liver and spleen size and tissue de-struction occurred in group 2 (similar to nega-tive control: group 1); these complications were not observed at all (more details mentioned in the previous section).

Discussion

Due to the prevalence of various types of cancer, using complementary and alternative medicine is one of the topics of interest and reference of researchers and experts globally. FCF as one of the TCFs has been introduced as a complemen-tary therapy by Taheri. In this study, we examined the effects of FCF on tumor growth and metastasis. According to the results, the use of FCF in the model of induced cancer in mice, in the pretreatment model, completely led to the survival of mice, limitation of tumor size, and no metastasis. On the other hand, its use after complete tumor formation in mice does not achieve these results. These data suggest that (simultaneous) pre-treatment of mice receiving cancer with FCF can lead to tumor control and inhibition. However, post-tumor therapy did not inhibit the tumor growth (group 3) which was similar to untreated tumors (group 4). In addition, the survival of group 3 mice was lower than that of the untreated group. Simultaneous exposure of mice to cancer cells and] FCF (group 2 mice) provided a better performance opportunity for FCF in the treatment of cancer because before the tumor was fully formed, the mouse body was exposed to FCF. According to the results, prevention of tumor size increase, lack of cell migration to adjacent tissues, and increased vitality and survival of the organism were observed in the group 2 mice.

As it was explained briefly in the introduction section, TCFs can apply to all living and non-living creatures. In the present study, a model of breast cancer at the mouse level was under influence of FCF, and optimization of the subject of the study, in the connection between mice and CCN, was done solely through Faradarmangar's mind. In other words, the human mind has an intermediary role (Announcer), which plays a part by fleeting attention to the subject of the study, and then the main achievement is obtained as a result of the effects of the TCFs.

Although we cannot measure FCF directly and its mechanism is not clear yet, it is possible to investigate its effect through in vivo and in vitro experiments (Phase 0 in studying TCFs) Since the effect of FCF is initiated without any kind of physical intervention, it can be considered a safe way to control and prevent diseases like cancer.

Evidence for the functioning of FCF in this study, considering other studies in this field (Taheri et al., 2020a; Taheri et al., 2021b; Taheri et al., 2021c), supports the claim made by the founder of this approach, and fully suggests its use as a complementary and alternative medicine. Due to the remarkable results of this study in reducing the size and weight of the tumor in the animal model of cancer, conducting a study at the level of primary cancer cells and clinical human studies of this and other types of cancer, is on the research agenda of the authors.

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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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