# 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 $5\times10^3$ 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 ($1.5\times10^5$ 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<br>R: AGCACTGTGTTGGCGTACAG | 58 | 184 |
| *Bax* | F: GCAAACTGGTGCTCAAGG<br>R: ACTCCCGCCACAAAGA | 64 | 187 |
| *Bcl2* | F: TGGGAAGTTTCAAATCAGC<br>R: GCATTCTTGGACGAGGG | 64 | 297 |

**F = Forward; R = Reverse**

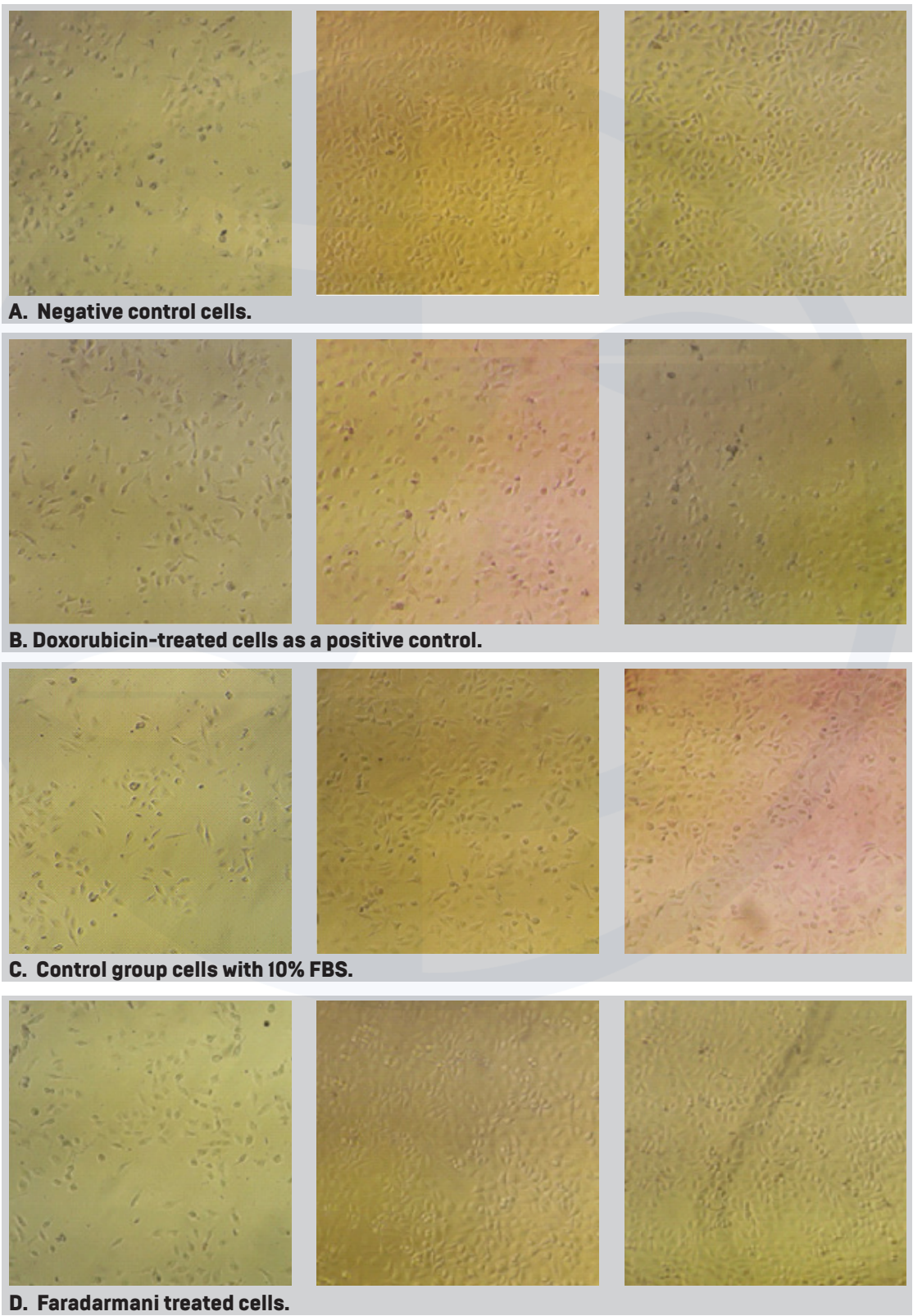



**Fig 1 .** MCF-7 cells in each group at 6h (left), 18h (middle) and 24h (right) treatment. a: Negative control cells; b. Doxorubicin-treated positive control cells; c. 10%FBS control cells. d. Faradarmani CF treated cells.

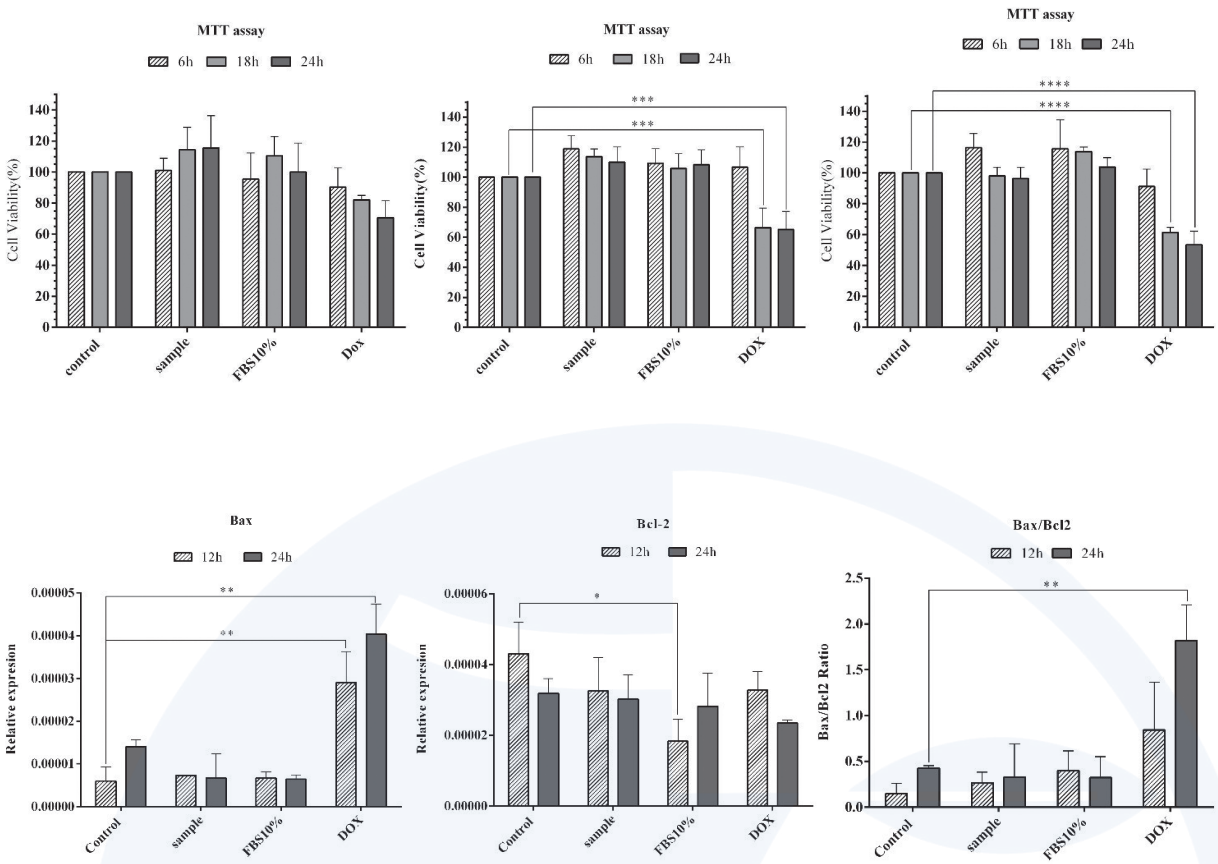



**Fig 2 .** The diagram of samples treated with Faradarmani CF (sample), Dox (positive control), and dietary factor (FBS 10%) compared to the untreated or negative control (control), evaluated by MTT test at three treatment times of 6, 18, and 24 hours in the three spacing test conditions. Right: No.1 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)

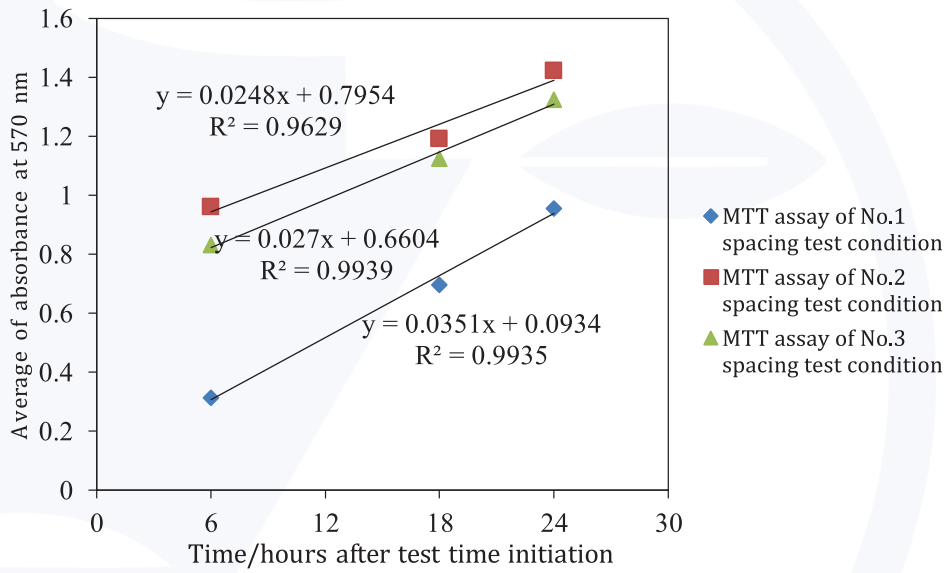
In the spacing test conditions of No. 2 and No. 3, none of the changes in cell viability is significant in the samples under Faradarmani CF and FBS 10% treatments. In contrast, there are decreases in cell viability of the positive control (Dox) at 18 and 24 hours in spacing test conditions No.2 and No.3,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

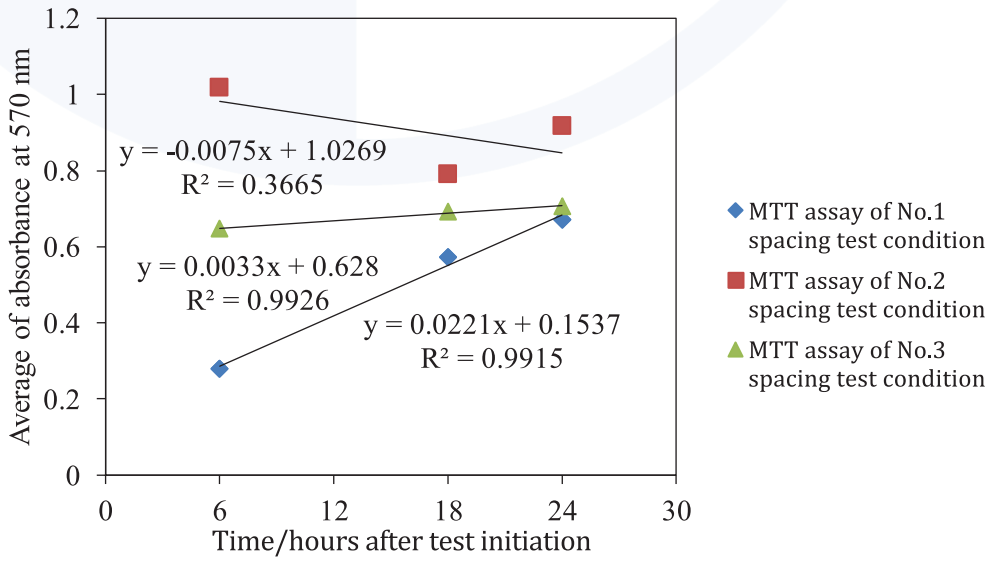
Fig 3 shows the analyses of the cell population viability changes in each study group (controls and sample) compared with one another in three spacing test conditions. As presented in Fig 3 A, the slope of increase in negative control cell viability in spacing test condition No. 1 is approximately 32% 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.

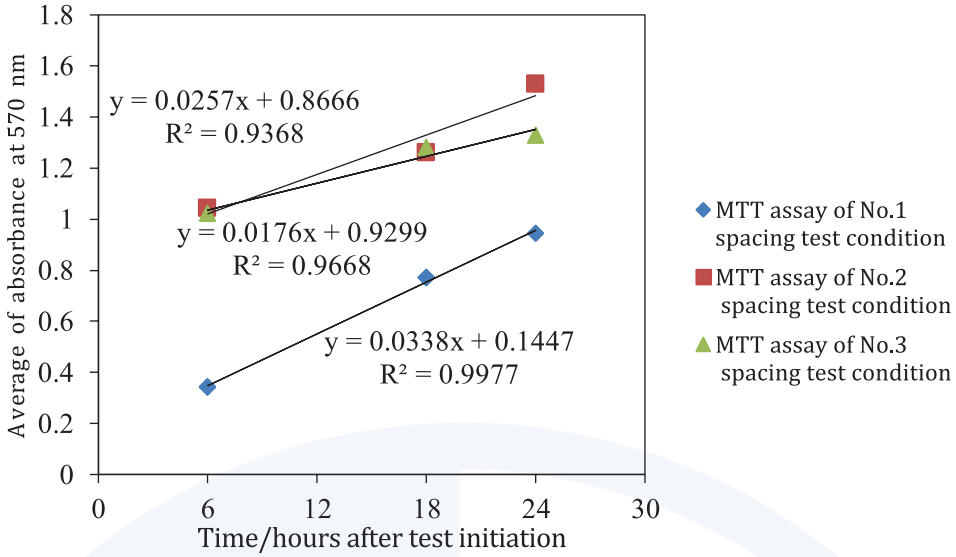
As shown in Fig 3D, the No.1 test condition with a 41%higher slope of the population is increased in comparison with negative control, showing the highest rate of increase in cell viability 24 hours after test initiation. While this increase in two other spacing test conditions is lower than according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



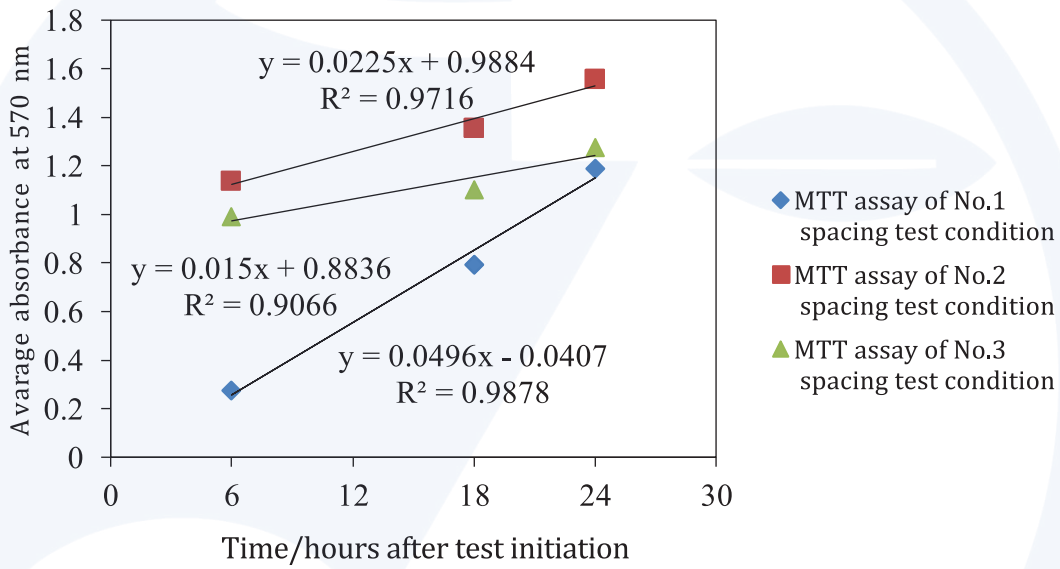

**A.** The MCF-7 cell viability increased in negative controls groups.




**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.

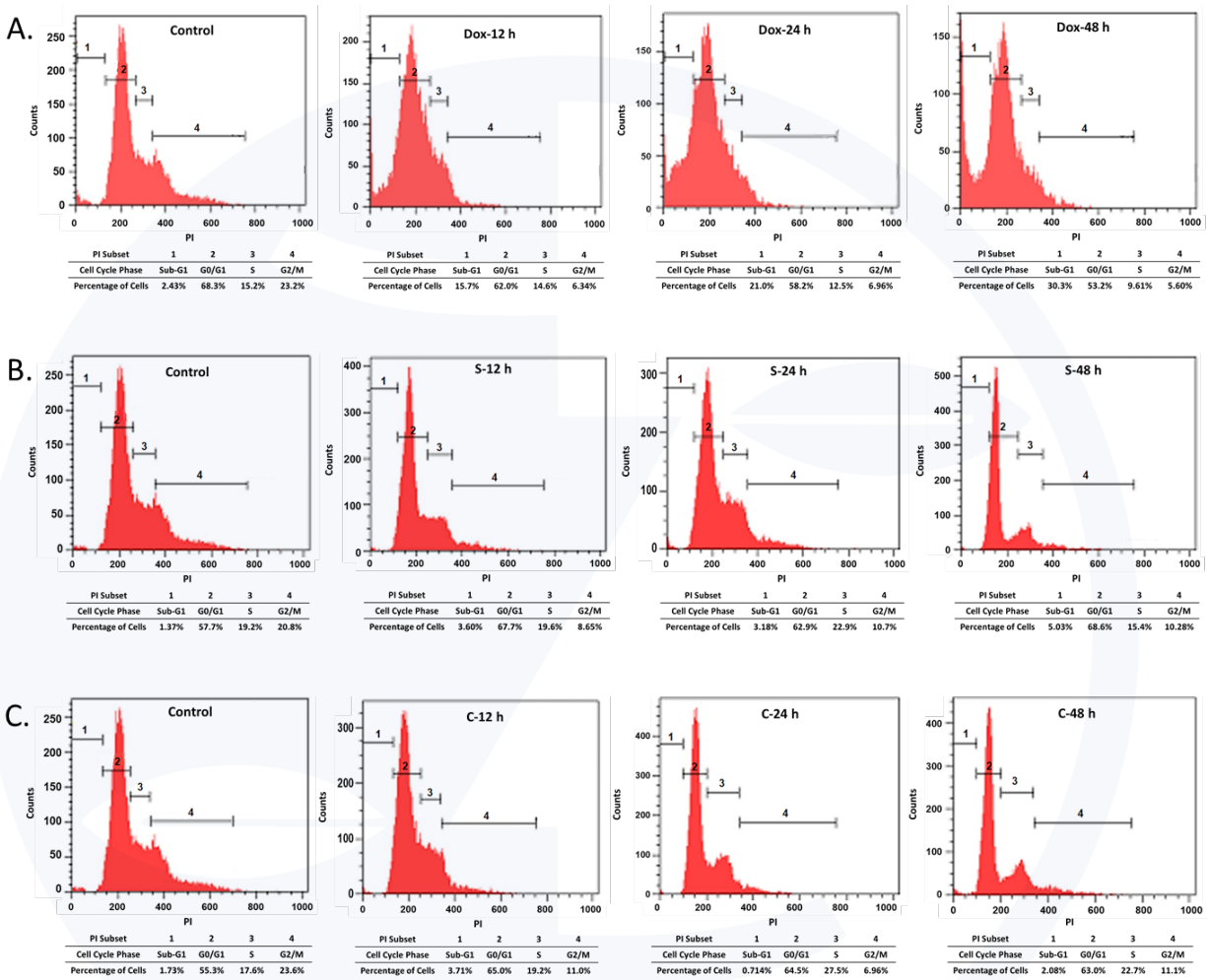



**Fig 4.** Cell cycle at different stages in each group of study; A. DOX-treated cells; B. FEB 10% -treated cells; C. Faradarmani CF-treated cells. All groups were compared with the negative control.

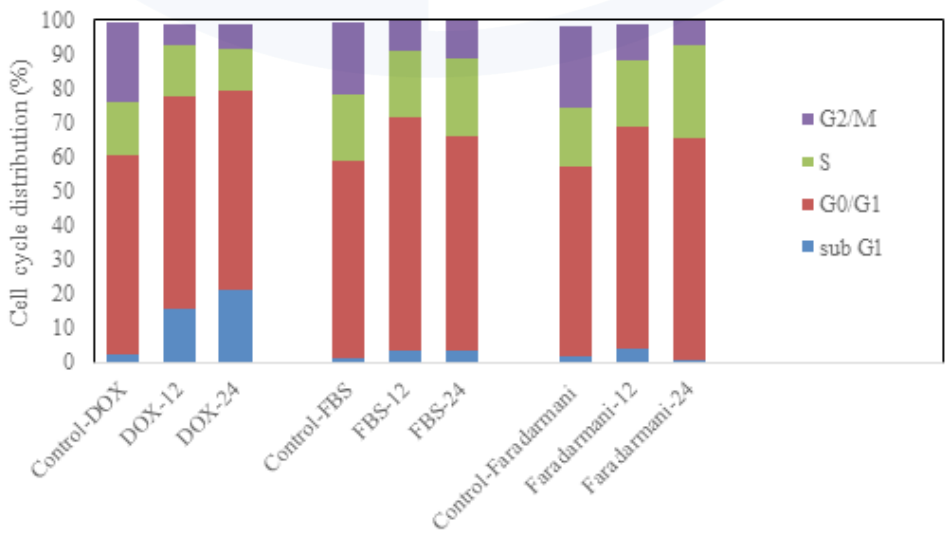



**Fig 5.** Cell cycle distribution of sample and controls up to 24h.

### *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.

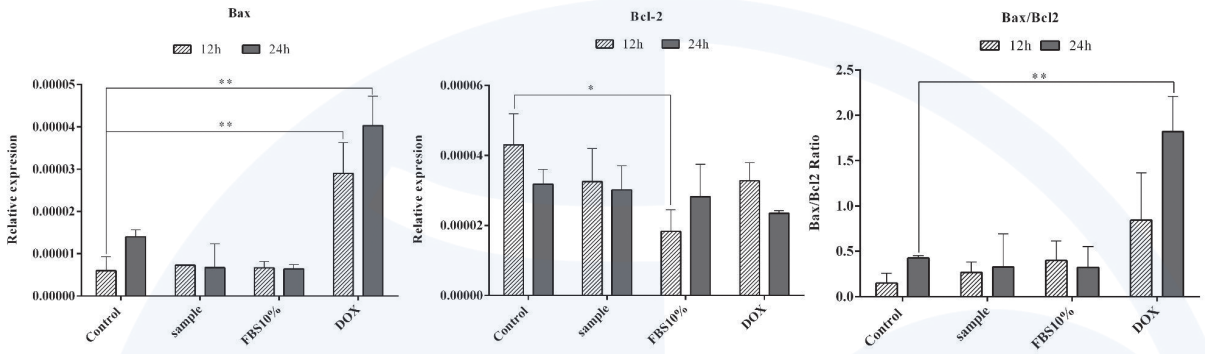



**Fig 6.** The expression changes of *Bax*, *Bcl-2* genes in MCF-7 cells treated with Faradarmani CF (sample), Dox (positive con-trol) and dietary factor (FBS 10%) compared to untreated or negative control cells. The cells were exposed to the compound for 12-24 h and relative expression levels were measured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

The authors declare that there is no conflict of interest

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