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Investigating the Behavioral Variety of

## Cell Lines Under the Effect of Taheri Consciousness Fields

Mohammad Ali Taheri
Originator of T-Consciousness Theory

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# Investigating the Behavioral Variety of Cell Lines Under the Effect of Taheri Consciousness Fields



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# Table of Contents:




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The First Scientific Journal in T-Consciousness Research

# Editorial

**Mohammad Ali Taheri**
Founder of T-Consciousness Theory

## Empirical Evidence on the Software Influence of Taheri Consciousness Fields and the Existence of Mind at the Cellular Level

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Studies of the effects of T-Consciousness Fields and the various experiments in this field are performed in accordance with the study phases mentioned in the author guidelines. The first phase (phase zero), or the first step, is detecting the effects of these non-material and non-energetic fields at the level of living organisms and nonliving materials.

Sciencefact, an emerging field of study, provides researchers with a framework for designing scientific experiments that go beyond the traditional examination of matter and energy. This new science makes it possible to study and investigate the other element of the universe: T-Consciousness. In previous studies, it was observed that cancer cells behave differently in ex vivo, in vivo, and in vitro environments. For example, in a study on a rat cancer model, metastasis was inhibited, while an induction of growth in cancer cells was demonstrated in a culture medium.

Thereby, a wide variety of cell lines with different morphologies were exposed to TCFs through the conduction of various experiments. What you will read in this issue includes four studies conducted on the subject of the effect of TCFs on living cells, and the examination of their results in light of the theories proposed by the founder of the TCF theory: Mohammad Ali Taheri. Studying the behavior of living organisms with respect to their functional and structural details and the countless variables involved in survival mechanisms, is a complicated endeavor that is full of unknown parameters.

Regardless of the healing effects, the observation of the effects of TCFs at the level of cancer cells has the potential to broaden horizons and unveil new insights regarding various dimensions of life in the universe for researchers.

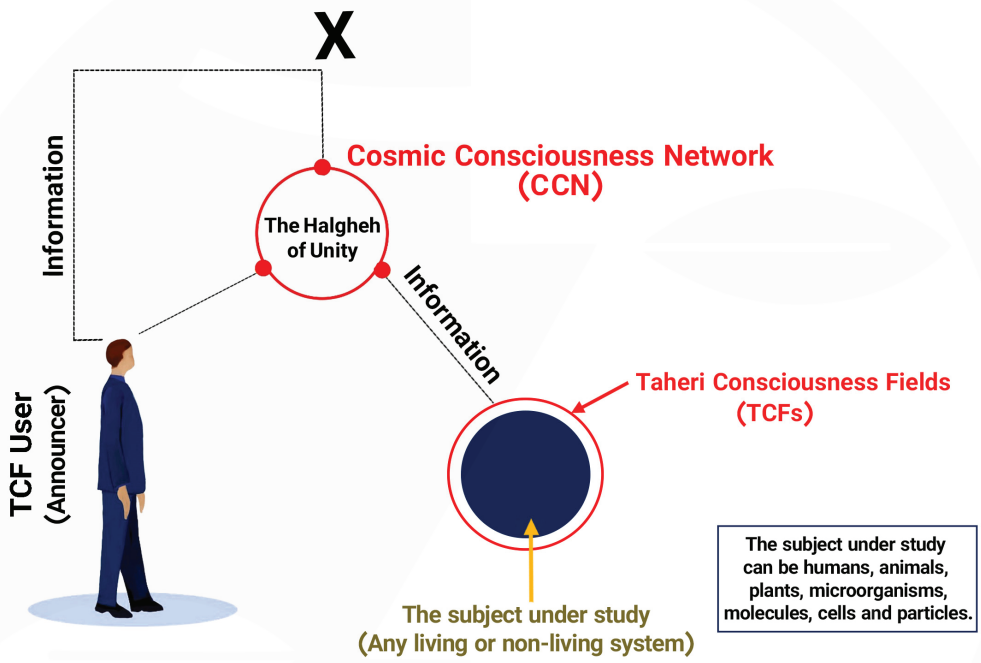
The research method of TCFs does not involve any kind of material and energetic intervention. The tests are performed in a double-blind method by experts who are unfamiliar with the TCFs Theory. As we study the effects of TCFs, we are faced with the question of how these changes can appear at a cellular level without any form of intervention. What factor, under the influence of TCFs, has altered the behavior of a cancer cell in comparison to a control cell?

According to science, cancer cells react to medication and or a specific chemical compound; while TCFs do not have material or energetic properties.

According to Taheri's theory, software existing beyond the hardware of the cell, determines its function. In reality, the influence of the T-Consciousness Fields can be referred to as the "software effect."

The subject of study in these tests comprises different cell lines that behaved differently under the influence of the TCFs in comparison with the control group. This change in behavior is an indicator of information being received upon exposure to the TCFs. The "Cell Mind" is what makes it possible for the cell to receive information.

Studies are ongoing in the field of TCFs and the extent of their function on the various levels of living organisms and non-living materials. Every issue presents knowledge-seekers with empirical observations of the latest studies performed in this field based on the theoretical principles of TCFs.




**Schematic picture of the application of Taheri Consciousness Fields (TCFs).** The effects of TCFs are initiated through the connection to the Cosmic Consciousness Network (CCN), which is established via the Faradarmangar's (announcer) mind. There are variable TCFs that are a subset of this intelligent network and with applying them specific information is transmitted. This way, the subject under study, comprising living organisms or non-living matters, becomes exposed to the mentioned information. It is important to note that TCFs and proposed information by Taheri do not possess material or energetic entities, making direct quantitative measurement impossible. However, their effects can be recorded through the design of diverse experiments. To accomplish this, obtained data regarding the behaviors or other traits of the subjects under study is collected while under the influence of these fields. These observations are then compared with control groups (those not subjected to TCF treatment), and the results are subsequently analyzed statistically and reported.

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# General Considerations of This Issue

## 1- Introduction

In the 1980s, Mohammad Ali Taheri proposed the existence of novel non-material/non-energetic fields called Taheri Consciousness Fields or T-Consciousness Fields (TCFs). In his theory, T-Consciousness is considered as one of the three constituent elements of the universe, apart from matter and energy. According to Taheri, there are various TCFs with different functions that are the subcategories of a network of 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 TCFs. T-Consciousness Fields can be applied to all living and non-living systems, including humans, plants, animals, microorganisms, hard and soft materials, etc.

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

The influence of the TCFs begins with the connection between the CCN, as the consciousness of the whole (the universe), and the subjects of study [establishing a "Consciousness Bond" between the two]. This connection called "Etesal" is established by the 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. The main achievement is obtained as a result of the effects of the TCFs on the announced systems. These fields cannot be directly measured by science, but it is possible to investigate their effects on various subjects through reproducible laboratory experiments.

## 2- The research methodology in the study of T-Consciousness

It has been founded on the process of Assumption, Argument, and Proof, in which the basic assumption is that the Cosmos was formed by a third and the most fundamental element called T-Consciousness which is different from matter and energy. The argument is that the existence of *T-Consciousness* Fields can be demonstrated by its effects on matter and energy (e.g., humans, animals, plants, microorganisms, cells, materials, etc.). The Proof for this claim is that the scientific verification of effects of TCFs on matter and energy is possible through various reproducible scientific experiments.

## 3- Research phases of Sciencefact

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

Phase-0 studies aim to prove the existence of TCFs by observing its effects on the subjects under study. 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 on subjects.

Phase-2 examines the reasons behind the variability of the effects of these fields.

Phase-3 investigates the mechanism of TCFs effects on matter and energy.

Finally, Phase-4 draws significant conclusions particularly with regards to the mind and memory of matter and their relation to T-Consciousness.

## 4-Methods

### 4.1 Taheri Consciousness Field application

TCFs were applied to the samples according to protocols regulated by the COSMOintel research center (www.COSMOintel.com). A request for connection to CCN to utilize this field can be placed through the COSMOintel website in the "Assign Announcement" section. This access is available for everyone at no cost. To study and experience this connection, the researchers can register on the site above at any time and report the experiment to the COSMOintel research center. Specific 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. The presented experiments were 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 consciousness bond 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.

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# Investigating the Effect of Faradarmani Consciousness Field on Breast Cancer Cells (MDA-MB-231)

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## Abstract

Breast cancer is the most common form of malignancy among women worldwide and is a multifactorial disease in the development of which various factors are involved. Faradarmani Consciousness Field (FCF) was introduced by Mohammad Ali Taheri as one of many Consciousness Fields that are neither energy nor matter, nor are they quantifiable, thus they cannot be directly observed or measured. However, it is possible to evaluate their effects indirectly through controlled experiments in the laboratory. This study aimed to investigate the effect of FCF on breast cancer cells (MDA-MB-231) measured by flow cytometry methods at 24 hours. To determine the cell death in the sample treated with FCF and compare it with the control, cells were stained with Annexin-V and propidium iodide (PI). Our results showed at 24 hours, the percentage of early and delayed apoptosis and total apoptosis and necrosis in the sample under the influence of the FCF compared to the control cell lines increased by 5.92 %, 3.49 %, 9.41 % and 4.68 % respectively. Finally, the rate of programmed death of cancer cells increased up to 9.41 % under the effect of this field in the cell line in this study.

**Keywords:** Breast cancer; Taheri Consciousness Fields; Faradarmani; Cancer cells

## Introduction

Breast cancer is one of the most common cancers among women. According to the statistics of the World Health Organization, breast cancer includes about 30% of cancers among women. About 1.2 million women are affected by this disease every year. This type of cancer is reported to be the second leading cause of cancer-related deaths in women after lung cancer. It has been estimated that the prevalence of breast cancer will increase from two million patients in 2018 to more than three million patients in 2046, which represents an increase of 46% (Sung et al., 2021; Siegel et al., 2019).

Breast cancer is a disease in which malignant cells originate from the breast tissue and multiply irregularly and increasingly. These cells often originate from mammary tissues, covering cells, milk ducts, and lobules around the ducts (lobular) (Shah et al., 2014). The MDA-MB-231 cell line is related to breast cancer, and in terms of morphology, it is epithelial and spindle-shaped. The invasive power of this cell line is mediated through the ability to proteolytically alter the extracellular matrix (Chavez et al., 2010; Łukasiewicz et al., 2021). This study aimed to investigate the effect of the Faradarmani Consciousness Field on breast cancer cells (MDA-MB-231).

## Materials and Methods

### Application of Faradarmani CF

In this study, MDA-MB-231 cells were exposed to Faradarmani Consciousness Field (FCF) once from the start to the end of study (24 hours). Also, MDA-MB-231 cells, which were not exposed to FCF fields, were considered as the control group.

### Cell culture

In this research, the MDA-MB-231 breast cancer cell line, obtained from the cell bank of the Pasteur Institute of Iran, was used. The cells were cultured in DMEM (Dulbecco's Modified Eagle Medium) (Gibco, USA) supplemented with 2 mM L-glutamine enriched, fetal bovine serum (FBS) (Gibco, USA) and 1% Penicillin/streptomycin antibiotic solution (Biosera, France) under controlled conditions of 37°C and 5% CO2. The cells grew as a monolayer in the flask. This culture medium was changed three times a week, and sterile trypsin-EDTA solution was used to harvest the cells.

### Flow cytometry

To determine the percentage of apoptotic cells in a cell population treated with FCF and compare it with the control cell population, cells were stained with Annexin-V and propidium iodide (PI) (Sigma-Aldrich, Germany). After treatment of the cells with FCF at 24 hours, the cells were trypsinized and washed with sterile phosphate-buffered saline (PBS). 100 microliters of binding buffer were added to the sediment resulting from the centrifugation of the cells in a 1.5 ml microtube. Next, 10 microliters of PI and 5 microliters of Annexin-V were added to the tube. The contents were gently mixed by manually shaking the microtube to ensure the cell pellet was fully resuspended. In the next step, the samples were incubated at room temperature (25°C) for ten minutes in the darkness. Finally, cell analysis was performed by flow cytometry (BD Biosciences, San Diego, CA, USA). Data analysis was done by using the software of the device and dividing the points recorded in the two-dimensional curve into four regions Q1 to Q4. To assess the effect of FCF on apoptosis and necrosis, the percentage of cells in each quadrant was calculated and reported using the flow cytometry analysis software (FCS Express).

### Statistical analysis

GraphPad Prism 9 and SPSS version 2016 were used for statistical calculations. The collected data were analyzed using one-way ANOVA followed by Tukey's post hoc test. Assays were repeated three times. A p-value of less than 0.05 was considered statistically significant.

## Results and discussion

According to the results of Table 1, a statistically significant relationship was observed between the control group and the group under the effect of FCF treatment (P<0.001). The results showed that the percentage of early and late apoptosis and total apoptosis and necrosis increased in the cell lines treated with FCF compared to the control (Figure 1).

Table 1. Effect of FCF on apoptosis in MDA-MB-231 cells in treated and control groups at 24-hour interval. Percentage of necrotic cells (Q1), percentage of late apoptotic cells (Q2), percentage of primary apoptotic cells (Q3) and percentage of viable cells (Q4).

| | Q1 | Q2 | Q3 | Q2+Q3 | Q4 |
|---|---|---|---|---|---|
| Control (-) | 3.72% | 0.93% | 4.68% | 5.61% | 90.7% |
| FCF | 8.40% | 4.42% | 10.6% | 15.02% | 76.6% |
| Difference of FCF from negative control | 4.68% | 3.49% | 5.92% | 9.41% | 14.1% |

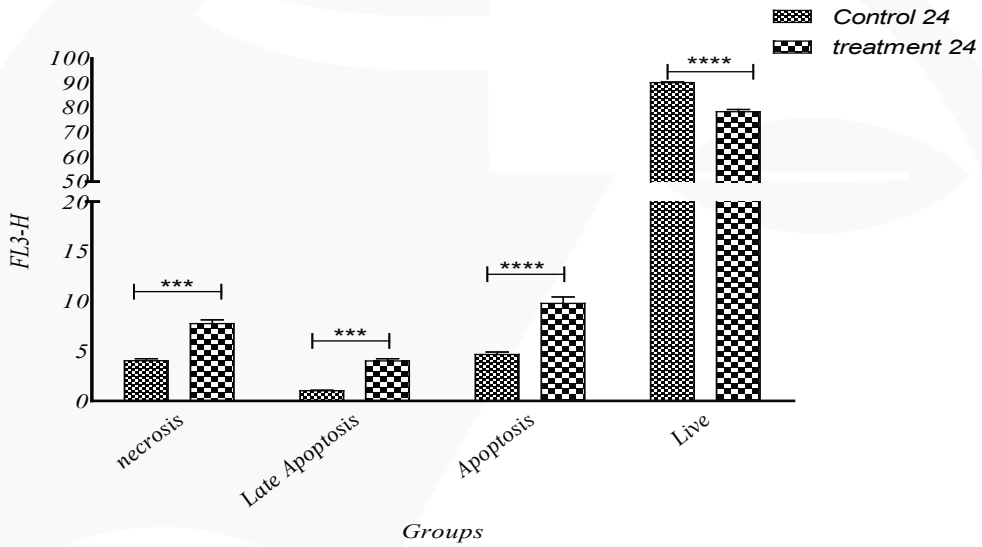


Table 1. Effect of FCF on apoptosis in MDA-MB-231 cells in treated and control groups at 24-hour interval. Percentage of necrotic cells (Q1), percentage of late apoptotic cells (Q2), percentage of primary apoptotic cells (Q3) and percentage of viable cells (Q4).

Previously, it has already been found that the behavior of cell lines can change depending on their growth environment. For example, an enhancement of growth can be observed under two-dimensional or *in vitro* conditions (Taheri et al., 2022a). While, in mice or *in vivo* model an inhibition of metastasis has been reported (Taheri et al., 2022b). In addition to the studies on cell lines, in microbiology experiments, it has been observed that virus replication increased under the influence of this field, whereas, in rat model, FCF improved the immune response induced by an inactivated vaccine against Foot and Mouth disease (FMD) (Taheri et al., 2022c).

The findings of this study on the MDA-MB 231 cell line indicate that FCF can reduce the survival of this cell line and increase the programmed death. Completion of this experiment using the MTT assay, as well as assessing cell viability through flow cytometry at 48- and 72-hour time intervals, is planned by the authors of this study. As a next step, we suggest that in future studies, the effect of FCF on the level of expression of apoptosis-inducing molecules such as Fas (CD95) be investigated. Also, effects of this field on the behavior of various cell lines be investigated and compared in different environment, including two and three-dimensional cell cultures and *in vivo* models.

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# Analysis of Cell Cycle in Embryonic Fibroblasts and SW480 (Colon Cancer) under the Influence of Taheri Consciousness Fields

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## Abstract

According to Taheri, applying the Faradarmani Consciousness Field (FCF) can lead to the repair and improvement of any system that is placed under the influence of this T-Consciousness Field. Previously, a growth-inducing effect of the FCF on the MCF7 and 4T1 cancer cell lines was observed under i*n vitro* and *ex vivo* environments respectively. The same cannot be said for *in vivo* experiment as FCF inhibited the growth of tumor in the body of the cancer mouse models. Overall, the results of previous studies confirmed that cancer cell survival and growth is affected by FCF. The present study aimed to evaluate the reproducibility of the observations in previous studies using *in vitro* cell cultures of fibroblast cell line under *Faradarmani Consciousness Field (FCF)* and SW480 cell line under two types of Taheri Consciousness Fields (TCFs). Cell cycle analysis showed that FCF led to a decrease in apoptosis and increase in proliferation of fibroblast cell line. This observation was in accordance with previous studies. Furthermore, according to the MTT assay results, both TCFs 1 and 2 increased survival in the SW480. The flow cytometry data were also consistent with this observation. Cell cycle analysis showed that TCF2 reduced cell survival and the proliferation rate of this cell line. In conclusion, TCFs affected death and survival of these cell lines. Further *in vitro* and *in vivo* studies are necessary to fully understand the precise mechanism of these non-material/non-energetic fields.

**Keywords:** Faradarmani Consciousness Field; Taheri Consciousness Fields; Fibroblast; Cell cycle; Colon cancer, SW480

## Introduction

Embryonic fibroblasts are used for investigating the effects of growth induction factors because of their easy access, handling, and rapid growth rates. Fibroblasts are a group of heterogeneous resident cells of mesenchymal origin that have different locations, diverse appearances, and distinct activities (Qiu et al., 2016). In previous research, according to "Sciencefact" using Taheri Consciousness Fields (TCFs), *in vivo* (Taheri et al., 2022a), *ex vivo* (three-dimensional) (Taheri et al., 2022b) and *in vitro* (two-dimensional) (Taheri et al., 2022c) experiments were conducted. In fact, mainstream science is focused on the physical aspect, or matter and energy. Meanwhile, consciousness—according to Taheri—has a non-physical nature. To distinguish this viewpoint from others, the term T-Consciousness is used here. Therefore, Sciencefact is an approach that, through designing scientific experiments, seeks to reveal the effects of T-Consciousness. Moreover, various T-Consciousness fields with different functions have been introduced, which are subsets of the Cosmic Consciousness Network. Although these fields cannot be directly measured by quantitative instruments, it is possible to record and examine their effects through designing appropriate tests (Taheri et al., 2013). To evaluate the reproducibility of the previously reported results of the influence of TCFs on the cancer cell lines in vitro, we studied the influence of FCF on embryonic fibroblast cells with optimal proliferative capacity using flow cytometry.

Moreover, colorectal cancer is the third most common cancer in the Western hemisphere and its incidence increases with age. Most colorectal cancers with or without lymph node metastasis are local and up to 20% of patients with metastatic disease are more likely to have liver disease (Haraldsdottir et al., 2014). The SW480 cell line was derived from the colon tumor of a 50-year-old Caucasian male patient with colorectal adenocarcinoma. They have an epithelial morphology and high levels of p53, c-myc, K-ras, H-ras, N-ras, sis, myb and fos oncogenes. These cell lines are widely used in biomedical research to aid research and finding a cure for colon cancer (Xiong et al., 2014). In the current study, in addition to fibroblast cell line, the behavior of SW480 under two types of Taheri Consciousness Fields (TCFs) has been investigated.

## Material and Methods

### TCF1 application

In this study, Faradarmani or TCF1 was allocated once every 24 hours for the sample cell culture plates, during the whole study period. Negative control is the fibroblast cells which are untreated with FCF.

### Application of TCFs on SW480 cell line

In this study, the samples treated with TCFs in 12, 24 and 48 hours and this treatment was allocated once every 24 hours for the sample cell culture plates, during the whole study time.

### Cell Culture

The cell lines used for this study were purchased from the Pasteur Institute of Iran. Fetal bovine serum was obtained from Roswell Park Memorial Institute 1640 (Gibco Laboratories, Grand Island, NY) and diluted to 10% using culture media. Penicillin (100 IU/ml) and streptomycin (100 µg/ml) were also supplemented in the culture media (Serox, Germany). Cell cultures were kept in a humid incubator at 37 °C (Memmert, Schwabach, Germany) with 5% $CO_2$. Relative humidity was maintained between 95% and 98% by an atomizer system or water reservoir. Cells were in their logarithmic growth phase for all experiments. The controls in this study were as follows: the negative control consisted of SW480 cells that were not treated with TCFs or the drug, and the positive control consisted of these cell lines treated with doxorubicin.

### MTT Assay

The MTT test was used to evaluate cytotoxicity and cell viability after treatment with TCFs. $3 \times 10^3$ cells were plated in a 96-well culture plate. The effects of TCFs on cell viability were evaluated using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT). For this purpose, MTT (Sigma, Taufkirchen, Germany) at a concentration of 0.2 mg/ml in RPMI-1640 medium was used. The cells were then incubated at 37 °C. After 4 hours, the medium was replaced with 100 µl of dimethyl sulfoxide (DMSO) and 25 µl of Sorenson's buffer (glycine 0.1 M, NaCl 0.1 M, pH 10.5 adjusted with 0.1 M NaOH). The cells were incubated at 37 °C for 30 min, and a microplate reader (Tecan, Sunrise, Switzerland) was used to measure the absorbance at 570 nm.

### Cell Cycle Analysis

Cell cycle progression analysis was performed by staining with propidium iodide (PI). The cells were cultured in 6-well plates ($1 \times 10^5$ cells per well) and kept overnight in a standard incubator. The cells in the experimental group were washed, separated, and harvested, then suspended, fixed in 70% ethanol, and kept at 4 °C for an additional 72 hours. Cells were stained at 37 °C for one hour using 50 µg/ml PI. The proportion of cells at different stages of the cell cycle was assessed using a flow cytometer on the FACSCalibur system (Miltenyi Biotec FACSQuant 10).

### Flow cytometry

Possible changes in apoptosis were measured after treatment with TCFs using the annexin V/propidium iodide (PI) flow cytometry method. A total of $1 \times 10^5$ cells in a 6-well culture plate were used for this assay. After 24 hours, TCF-treated cells were trypsinized and centrifuged at 1,500 rpm for 5 minutes. The cells were then stained with annexin V and PI according to the manufacturer's instructions. For annexin V staining, 2 µl of annexin V, 1 µl of propidium iodide, and 100 µl of binding buffer were added to the samples. The cells were incubated for 15 minutes at room temperature in the dark. The samples were then analyzed by flow cytometry (MACSQuant Analyzer 10, Miltenyi Biotec, Germany). The rate of apoptosis was assessed using FlowJo software (Tree Star, San Carlos, CA).

### Statistical Analysis

Data were analyzed using GraphPad Prism software, version 6.0 (San Diego, CA). All values are presented as mean ± standard error. All analyses were repeated at least three times. To determine the significance of differences, t-tests and analysis of variance (ANOVA) were used, and p-values $< 0.05$ were considered statistically significant.

### Results and Discussion

According to Figure 1, there is a decrease in population of sub G1 stage and an increase in G1 phase in the presence of FCF. No significant changes were seen in the S and G2 phases. In other words, FCF led to a reduction in apoptosis rates and an increase in cell survival in this cell line.

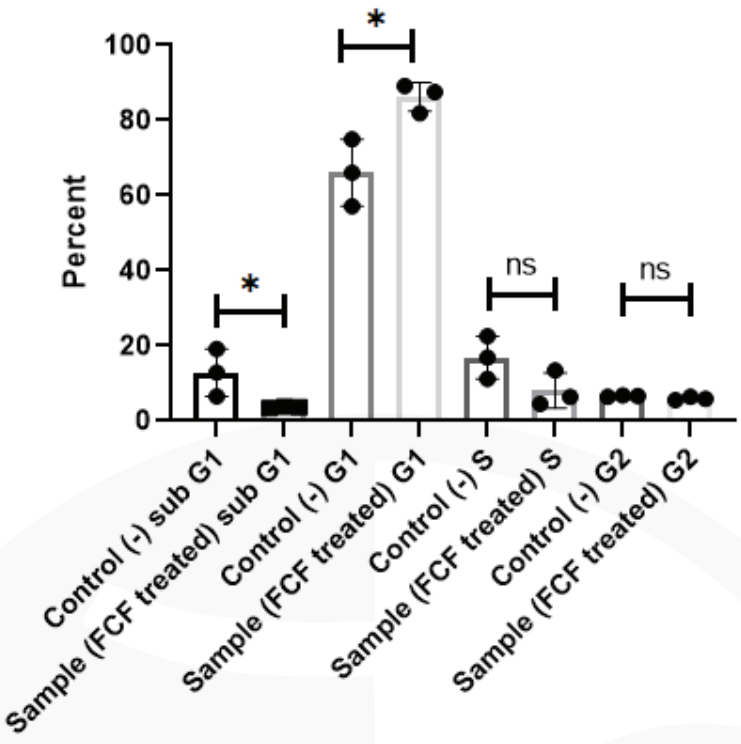


Figure 1. Fibroblast cell cycle analysis under the influence of FCF. *: p-value<0.05, ns: non-significant.

In addition, the MTT assay is used with the aim of measuring cell metabolic activity. The alterations in the behavior of the SW480 cell line at 12, 24 and 48 hours under influence of TCFs compared to the control is presented at Figure 2.

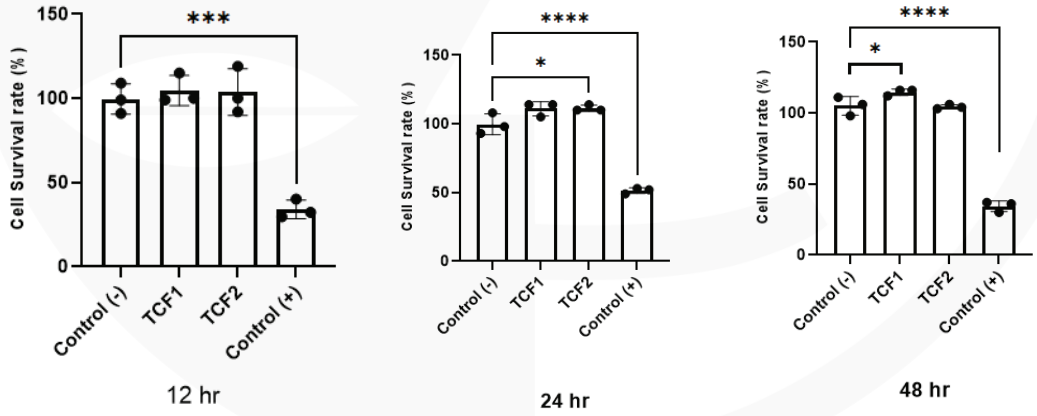


Figure 2. Comparison of the MTT analysis of the SW480 cell line at 12, 24 and 48 hour intervals. (TCF: Taheri Consciousness Field). *: p-value<0.05 ***: p-value<0.001, ****: p-value<0.0001.

As can be seen, SW480 cell line at 24 hours and 48 hours showed increase in survival under the influence of TCF1 and TCF2, respectively. Although the obtained data from MTT assay usually are attributed to the number of viable cells, the rate of tetrazolium reduction represents the metabolic activity of cells such as the rate of glycolytic NADH production (Berridge et al., 2005). So based on the aforementioned results it can be said that there was an increased metabolic activity in SW480 under TCF1 from 12 to 48 hour, and as a result of TCF2 treatment the same behavior was observed at 24 hours. It is to be noted this influence of TCF2 followed

by apoptosis and decreased mitosis at 48 hours. Cell cycle analysis was done at 48 hours. As can be seen in the Table 1, the G2/M phase in the SW480 cell line decreased significantly as a result of TCF2 treatment.

Table 1. Cell cycle analysis of SW480 cancer cell line

| TCF | Cell cycle percentage | | |
|---|---|---|---|
| | G1 | S | G2/M |
| Control (-) | 74.3 | 17.8 | 7.58 |
| TCF1 | 72.3 | 18.8 | 8.17 |
| TCF2 | 89.5 | 8.58 | 1.25* |

*: p-value<0.05

The results obtained from flow cytometry for the SW480 cell line are presented in the Table 2. As observed, the majority of cells, similar to the control sample, were located in the Q4 region. The group exposed to the TCF2 was about 2% lower in the Q4 region, with increases observed in the Q1 and Q3 regions. Considering no significant changes in the regions, the observations of this section are consistent with the MTT assay.

Table 2. Flow cytometry results of cell death in the SW480 cell line.

| % of each cell state | | | | Sample | Cell line |
|---|---|---|---|---|---|
| Q4 | Q3 | Q2 | Q1 | | |
| 98.3 | 0.086 | 0.68 | 0.94 | Control (-) | SW480 |
| 98.1 | 0.18 | 0.37 | 1.35 | TCF1 | |
| 96.7 | 0.92 | 0.9 | 1.77 | TCF2 | |

Here, TCF refers to the T-Consciousness Field; Q1: percentage of necrotic cells; Q2: percentage of late apoptotic cells; Q3: percentage of early apoptotic cells; and Q4: percentage of viable cells.

As it has been explained in the introduction section, the aim of designing experiments in the zero-phase of TCFs research is mainly to report the effects of these novel fields apart from their mechanism at the cellular level. Based on the result, Faradarmani had similar effect on the cell cycle progression of fibroblast cell line and SW40 cell line had different behavior under TCFs compared to the control. These observations warrant more studies, so further investigations about the effect of TCFs on cellular responses will be conducted to test reproducibility.

## Acknowledgment

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# Cell Cycle Progression of Jurkat (Leukemia) and LA-N-5 (Neuroblastoma) Cell Lines under the Influence of Taheri Consciousness Fields

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## Abstract

Mohammad Ali Taheri has introduced T-consciousness as a third element of the universe, in addition to matter and energy. There is a wide variety of Taheri Consciousness Fields (TCFs) that cannot be measured directly. However, it is possible to investigate their effects on various subjects. Previously, survival and death of different kinds of cancer cell lines have been evaluated under influence of TCFs. This experiment was designed with the aim of reproducing obtained results and investigating the effects of two types of TCFs (1 and 2) on this behavior of Jurkat cell line with lymphoblast morphology and LA-N-5 cell line with fibroblast morphology, which cause leukemia and neuroblastoma, respectively. First, the effects of TCFs on the Jurkat cell line was examined using the MTT assay at 12, 24, and 48 hours. Additionally, after 48 hours, cell cycle analysis was performed in both cell lines using flow cytometry. According to the obtained data, TCF2 increased the viability of the Jurkat cell line at 12 hours, while TCF1 caused a significant increase in the G2/M phase, which may suggest checkpoint activation and accumulation of cells in this phase under the influence of the field. For LA-N-5, the results showed that TCF2 led to a significant increase in the S phase percentage. This increase was accompanied by a decrease in the G2/M phase, which may indicate an S-phase arrest. However, TCF1 did not induce any significant changes. These observations indicate that the application of different TCFs can lead to varying outcomes. Further studies are required to clarify the effects of TCFs at the biological levels.

**Keywords:** Taheri Consciousness Field; Neuroblastoma; Flow cytometry, LA-N-5; Jurkat; Leukemia

## Introduction

The Jurkat cell line is an immortal T lymphocyte cell line derived for the first time from the peripheral blood of a boy with T-cell leukemia. This cell line has often been used as a primary T cell line to study several events in T cell biology, including T cell signaling and molecular events in the HIV life cycle (Schneider et al., 1977). Many of the most common childhood cancers diagnosed with brain tumors such as Wilms' tumor, rhabdomyosarcoma, and high-risk neuroblastoma have very low survival rates (ACS Special Report 2014).

Neuroblastoma is the most common extracranial solid tumor in children. The prevalence of this disease is 1 in 8000 to 10,000 births and the 5-year survival rate is more than 95% for children in low-risk and moderate groups (Maris et al., 2007). These tumors are highly metastatic and resistant to conventional treatments like radiation or chemotherapy, and the LA-N-5 cell line is one of the cellular models of these tumors (Shastry et al., 2001).

According to Taheri's theory, T-Consciousness fields (TCFs) exist with a non-frequency-based nature and are a subset of the Cosmic Consciousness Network. The effects of these fields are initiated through the mind of an announcer (Faradarmangar) and occur with brief, and instantaneous attention. It is hypothesized that the information transmitted through these fields can induce changes in the subject under study. Previously, the effects of TCFs on cancer cell lines *in vitro* have been evaluated (Taheri et al., 2022 a, b). In this study, the effect of the TCFs 1 and 2 on the LA-N-5 cell line causing neuroblastoma and Jurkat cell line causing leukemia was investigated.

## Materials and Methods

### TCFs application

In this study, samples were under influence of TCFs for 12, 24, and 48 hours. Control in this study is as follows: negative control is the Jurkat cells which are untreated with no TCFs and drug, and positive control for Jurkat cells includes cells treated with temozolomide, and for the LA-N-5, cells treated with doxorubicin.

### Cell culture

Cell lines were purchased from the Pasteur Institute of Iran and cultured in 1640 Roswell Park Memorial Institute medium supplemented with 10% fetal bovine serum (Gibco Laboratories, Grand Island, NY), 100 IU/ml penicillin, and 100 µg/ml streptomycin. Cells were maintained in an incubator at 37 °C (Memmert, Schwabach, Germany) with 5% $CO_2$ and a humidified atmosphere. Cells in the logarithmic growth phase were used for all experiments in this study.

### MTT Assay

The MTT assay was used to evaluate cytotoxicity and cell viability following TCF treatment. A total of $3 \times 10^3$ cells were seeded in each well of a 96-well culture plate. Cell viability under these fields was assessed using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT). For this purpose, MTT (Sigma, Taufkirchen, Germany) was prepared at a concentration of 0.2 mg/ml in RPMI-1640 medium. The cells were incubated at 37 °C for 4 hours. After incubation, the medium was replaced with 100 µl of dimethyl sulfoxide (DMSO) and 25 µl of Sorenson's buffer (0.1 M glycine, 0.1 M NaCl, adjusted to pH 10.5 with 0.1 M NaOH). The cells were then incubated at 37 °C for 30 minutes, and absorbance was measured at 570 nm using a microplate reader (Tecan, Sunrise, Switzerland).

### Cell Cycle Analysis

Cell cycle progression analysis was performed by staining with propidium iodide. The cells were cultured in 6-well plates ($1 \times 10^5$ cells per well) and kept overnight in a standard incubator. The cells in the experimental group were washed, separated, and harvested, then resuspended, fixed in 70% ethanol, and kept for another 72

hours at 4 °C. Cells were stained at 37 °C for one hour using 50 µg/ml PI. The proportion of cells at different stages of the cell cycle was assessed using a flow cytometer in the FACSCalibur system (Miltenyi Biotec FACSQuant 10).

**Flow cytometry**

Possible changes in apoptosis were measured after TCF1 treatment using the flow cytometric Annexin V/Propidium Iodide (PI) method. A total of 1 × $10^5$ cells were cultured in a 6-well plate. Cells were then exposed to TCF1 treatment once per day throughout the study period. After 24 hours, the cells were trypsinized and centrifuged at 1,500 rpm for 5 minutes. The cells were stained with Annexin V and PI according to the manufacturer's instructions. For staining, 2 µl of Annexin V, 1 µl of PI, and 100 µl of binding buffer were added to each sample. The cells were incubated for 15 minutes at room temperature in the dark. Samples were analyzed by flow cytometry (Macs Quant Analyzer 10, Miltenyi Biotech, Germany), and the rate of apoptosis was assessed using FlowJo software (Tree Star, San Carlos, CA).

**Statistical Analysis**

Data were analyzed using GraphPad Prism software, version 6.0 (San Diego, CA). All values are presented as mean ± standard error. All analyses were repeated at least three times. To determine the significance of differences, t-tests and analysis of variance (ANOVA) were used, and p-values < 0.05 were considered statistically significant.

**Results and Discussion**

The MTT assay results for the Jurkat cell line are shown in Figure 1. As observed, TCF2 led to increased viability at 12 hours, while at other time points, the TCFs did not show a significant effect.

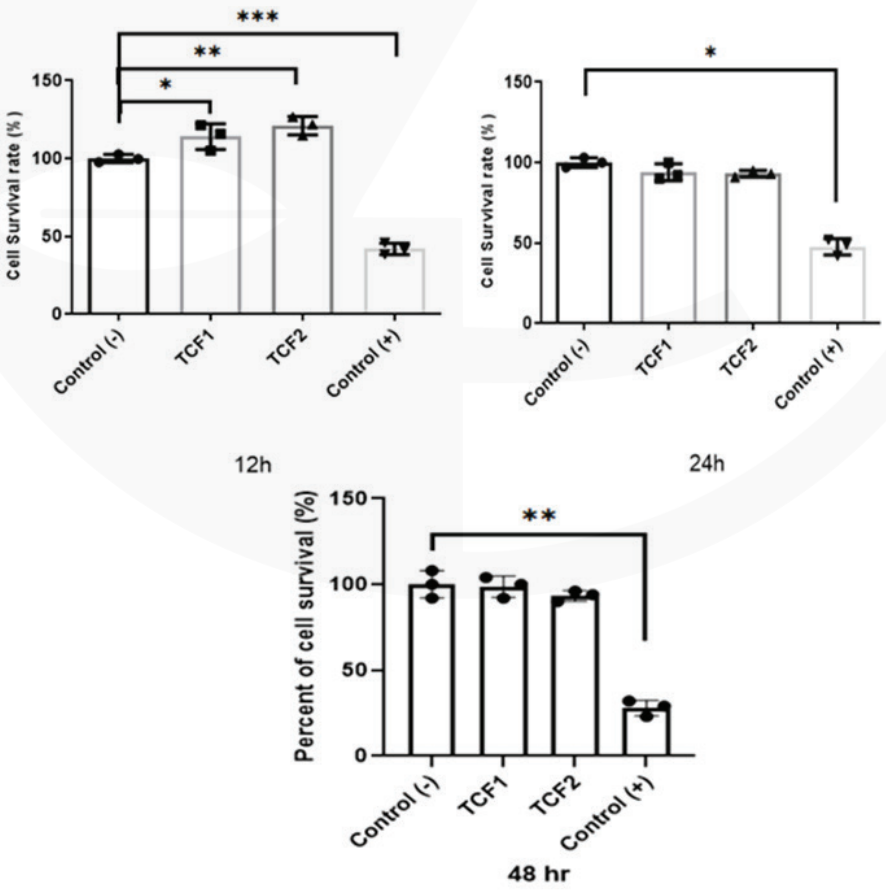


Figure 1. MTT assay results for the Jurkat cell line at 12, 24, and 48 hours (under the influence of TCF1 and TCF2). *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$.

The obtained data from cell cycle analysis can be observed in Table 1. Analysis of cell cycle distribution showed that Jurkat cells responded differently to TCF1 and TCF2. In the control group without field exposure, most cells were in the G1 phase (75.11%). Exposure to TCF1 led to a significant increase in the G2/M population (from 3.73% in the control to 8.99%), accompanied by a slight decrease in the S and G1 phases. This increase in the G2/M fraction indicates a delay or checkpoint activation at the G2/M transition and likely reflects an accumulation of cells before entering mitosis under the influence of TCF1. Notably, the S phase did not increase, further confirming that the main effect is limited to the G2/M boundary and not DNA synthesis. In contrast, TCF2 induced smaller changes in the cell cycle profile, with G2/M only slightly increased compared to control (5.24%). The percentages of S and G1 phases remained almost unchanged. This minor change suggests that TCF2 had no significant effect on cell cycle progression in this cell line. TCF1 treatment thus led to an increase in the G2/M phase in these cells.

Moreover, apoptosis assessment showed no significant changes in this cell line under the influence of the consciousness fields (Table 2). The population of viable cells (Q4) remained above 97% under all conditions, and no significant increase was observed in apoptotic (Q3/Q2) or necrotic (Q1) fractions. These data indicate that neither TCF1 nor TCF2 induced detectable cytotoxicity or apoptosis at the time of the experiment, which is consistent with the MTT assay results.

It is noteworthy that the slight increase in G2/M under TCF1 was not accompanied by increased apoptosis, suggesting a cell cycle delay. However, a modest increase in necrosis was observed in cells exposed to TCF2. Overall, TCF1 appears to affect regulatory mechanisms related to the G2/M transition, whereas TCF2 maintains a cell cycle profile close to the control, consistent with its previously observed effect in enhancing cell viability. The combination of maintained viability and altered G2/M distribution under TCF1 highlights the potential regulatory, rather than cytotoxic, effect of this field on Jurkat cell proliferation.

Table 1. The Cell cycle analysis of the Jurkat cell line under the influence of Taheri Consciousness Fields (TCFs).

| Samples | Cell cycle percentage | | |
|---|---|---|---|
| | G1 | S | G2/M |
| Control (-) | 75.11 | 21.16 | 3.73 |
| TCF1 | 72.78 | 18.23 | 8.99 |
| TCF2 | 73.15 | 21.61 | 5.24 |

Table 2. Flow cytometry analysis of the Jurkat cell line compared with the control.

| % of each cell state | | | | Sample |
|---|---|---|---|---|
| Q4 | Q3 | Q2 | Q1 | |
| 97.8 | 1.25 | 0.461 | 0.538 | Control (-) |
| 97.39 | 1.09 | 0.604 | 0.518 | TCF1 |
| 97.49 | 1.3 | 0.679 | 0.621 | TCF2 |

TCF: T-Consciousness field; Q1: percentage of necrotic cells; Q2: percentage of late apoptotic cells; Q3: percentage of early apoptotic cells; Q4: percentage of viable cells.

Moreover, TCFs affected cell cycle progression of LA-N-5 (Table 3). Particularly, TCF2 treatment led to a significant increase in S phase (around 16%) and a notable decrease in G2/M phase cells by about 60%. This observation indicates that the effects of TCFs can vary depending on the cell line type.

Table 3. Cell cycle analysis of LA-N-5 cell line under Taheri Consciousness Fields (TCFs) compared to control.

| Sample | Cell cycle percentage | | |
|---|---|---|---|
| | G1 | S | G2/M |
| Control (-) | 71.32 | 22.61 | 6.7 |
| TCF1 | 68.71 | 24.17 | 7.12 |
| TCF2 | 71.11 | 26.18* | 2.71* |

*: p-value<0.05

As it has been mentioned in the introduction section, there are a wide variety of TCFs with specific functions introduced by Taheri. In prior studies, their influences have been demonstrated frequently (Taheri et al., 2022c). According to this theory, the subjects under study, such as cell lines in the current experiment, receive information upon exposure to the TCFs. Based on Taheri's theory, in addition to the physical body, considered as hardware, the cells possess software to manage and guide hardware.

Changing the behavior of the cell lines in this research suggests that they have received information from TCFs. It is also worth mentioning that the effects of TCFs were investigated in double-blind way and without any kinds of physical intervention.This methodology makes results of the study less likely to be biased and with adequate repetitions exhibits the influence of TCFs. In this study, before describing the mechanism of TCFs, the observed results have been reported. Further research is necessary to be designed for gaining a better insight into how these fields affect cell behavior.

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# Investigation of Dynamic Behavior of Various Cell Lines in Culture Medium under the Influence of Taheri Consciousness Fields

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## Abstract

The influence of Taheri Consciousness Fields (TCFs) as non-material/non-energetic fields on various cell lines with different morphologies has been investigated. In the present study, we used violin probability density graphs to visualize the distribution of obtained data and to establish a better interpretation about the behavior of cell lines under the influence of these novel fields. According to the results, it was noticeable that cell response to the influence of TCF1 was different than that of TCF2, confirming the particular functions of each TCF. Moreover, the function of the TCFs cannot be described as an intervention. Indeed, the behavior of the cell lines changes as a result of information transmitted through TCFs. In conclusion, in this study, it has been shown that TCFs had dynamic effects on the survival and death of various cell lines.

**Keywords:** Taheri Consciousness Field; Cancer Cell; Information; Interaction; Probability density; Mind of cell

## Introduction

Cancer, as a major public health problem, is a leading cause of death all around the world. According to the American Cancer Society, in 2022, 1,918,030 new cancer cases and 609,360 cancer deaths are expected to occur in the United States. Worldwide, almost 10 million cancer deaths were reported in 2020 (Sung et al., 2021). The present study is an overall review about the integration of the results of some studied cell lines. The violin probability density graphs have used to visualize the distribution of obtained data and to establish a better interpretation about the behavior of cell lines under the influence of TCFs. In this regard, a cumulative analysis of cell viability and cell cycle data in the SW480, Jurkat and LA-N-5 cancer cell lines have been done in accordance with the mentioned graph.

## Method

### Statistical analysis

The data from the study was analyzed using Graphpad Prism software version 9.0, San Diego, (CA). All values were reported in the form of mean ± standard error and probability density analysis (violin diagram). All analyses were repeated at least three times. The t-test and analysis of variance (ANOVA) were used and p-values less than 0.05 ($p < 0.05$) were considered statistically significant.

## Results

### Comparison of MTT results and cell cycle stages

As can be seen in Table 1, the MTT test analysis based on box plots and comparison of means, in the case of SW480 and Jurkat, a growth-inducing effect is observed for both TCFs. The LA-N-5 cell line survival did not show any significant change.

Table 1. Percentage of change in the metabolic activity of different cell lines under the influence of Taheri Consciousness Fields (TCF1 and TCF2) in comparison with negative control.

| TCF | | 1 | | | 2 | | |
|---|---|---|---|---|---|---|---|
| Time/hr | | 12 | 24 | 48 | 12 | 24 | 48 |
| Cell line | SW480 | - | - | 10 | - | 13 | - |
| | Jurkat | 14 | - | - | 21 | - | - |
| | LA-N-5 | - | - | - | - | - | - |

In cell cycle view, as can be observed in Table 2, TCF1 arrested G2/M phase in Jurkat and TCF2 led to S phase and G1 phase arrest in LA-N-5 and SW480, respectively.

Table 2. Analysis of the percentage of cell cycle changes in different cells under Taheri Consciousness Fields (TCFs) compared to negative control at 48 hours. Green and red colors represent survival and death trends, respectively.

| Cell line | TCF | % Difference from control | | |
|---|---|---|---|---|
| | | G1 | S | G2/M |
| SW480 | Control (-) | - | - | - |
| | 1 | -2.69 | 5.61 | 7.17 |
| | 2* | 20.5 | -51.79 | -83.50 |
| Jurkat | Control (-) | - | - | - |
| | 1 | -3.10 | -13.84 | 141.01 |
| | 2 | -2.60 | 2.12 | 40.48 |
| LA-N-5 | Control (-) | - | - | - |
| | 1 | -3.65 | 6.89 | 6.26 |
| | 2 | -0.29 | 15.78 | -59.55 |

**Plotting the probability density of events in the MTT data**

A standardized way of showing the analysis of cell survival data under the influence of the drugs and chemicals is box plot with a mean and standard deviation. Recently, there have been criticisms that mean-and-error analysis fails to provide a complete analysis of possible data in the response domain (Marmolejo-Ramos and Tian, 2010). An approach used in the present study is calculation of probability density based on the available data, represented by violin plot. In this study the Graphpad software was used to draw violin plots of the data (Figure 1).

In this diagram, data analysis from box plots (conventional analysis) is marked with arrows and circles. As Figure 1 illustrated, in diagram (a), under the TCF1 treatment, the movement towards the survival of the cell population is observed by showing a significant difference at 48 hours. Moreover, the TCF2 treatment, unlike the TCF1, inhibited proliferation (despite significant reproduction at 24 hours) and induced the probable death phase. In diagram (b), we observe an arrest as a result of the TCF1 treatment (G2/M based on cell cycle data analysis). In diagram (c), TCF1 initially, led to a balance between survival and death. In the TCF2 treatment, the onset begins with the predominance of death at 12 hours and movement towards the survival range can be seen, and at 48 hours, further proliferation is prevented with arrest (in the S phase).

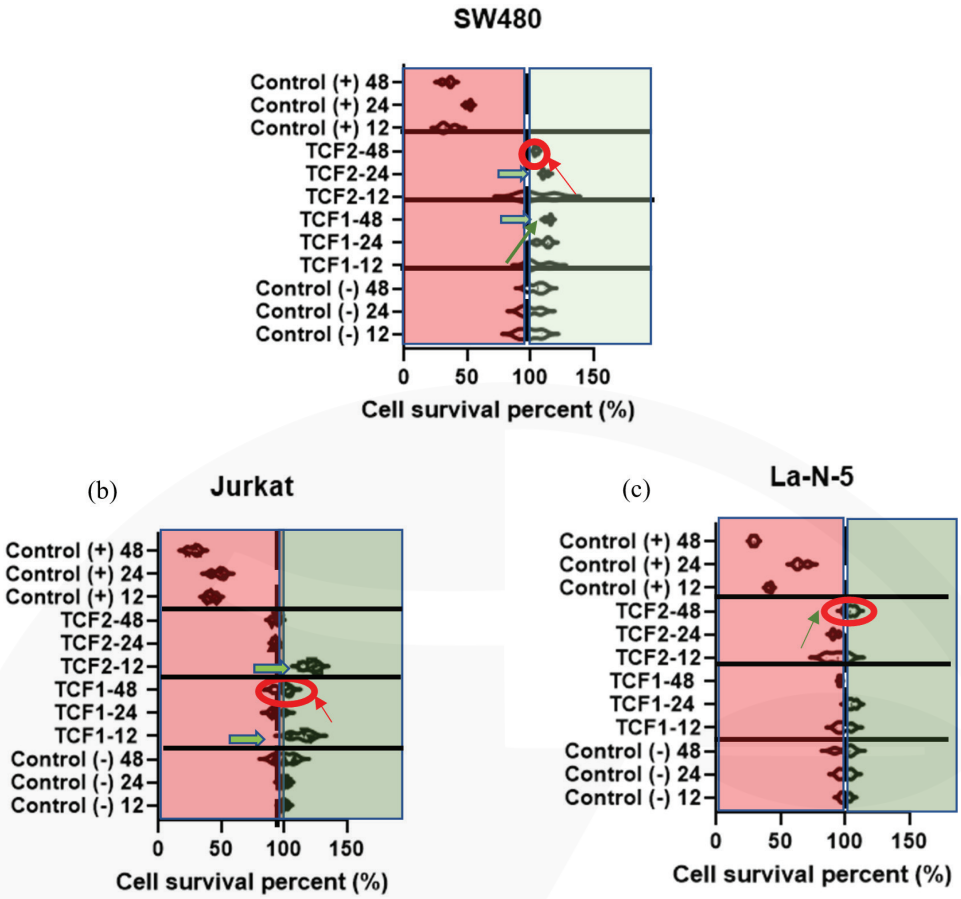


Figure 1. Violin plot of data, obtained from MTT method at different time slots (12,24, and 48 hrs.) for three cell lines of: (a) SW480, (b) Jurkat and (c) La-N-5 cell line. Thick green arrows represent the significance from analysis of the mean and standard deviation of the box and circles represent the data from the cell cycle analysis method. Green indicates the range or change associated with cell proliferation/survival, and red indicates the changes in the direction of cell death.

## Discussion

In this study, three cell lines, with different morphologies (epithelial, lymphoblast and fibroblast morphologies) as well as different types of cancer (colon cancer, brain cancer and Leukemia), were evaluated through studies such as MTT metabolic activity and cell cycle analysis. Violin diagram is a method to visualize numerical data (Postma et al., 2019). Thus, the data from the MTT test were analyzed by different analyses of the probability density of the data. Based on the results of this study, this method of analyzing cell behavior can assist in the description of the influence and function of the TCFs. The combinations, in fact, expand our horizons towards the distinct behaviors exhibited by TCFs-treated cells at different time intervals. These observations were confirmed by previously mentioned tests.

According to the TCFs' theory, the TCF1 function is to repair and optimize the subject of study (moving towards its constructive nature based on the information received from the whole consciousness); in a cell population, this goal is achieved by eliminating dysfunctional cells and inducing healthy cells. We have observed this trend in living systems, including normal and cancer cells such as those with epithelial morphology in this study. TCF2 affects cells through transmitting specific messages. Similarly, its possible way to influence cell population is nothing but eliminating dysfunctional cells and changing the behavior of cells between death and survival under TCFs. In

this study, along with the conventional approach that targets killing cancer cells with drugs, the aim of using TCF2 was also to stop the growth of cancer cells. The arrests observed in G2/M and S phases for the two cell lines that showed the least reactions to the TCFs (Jurkat and LA-N-5) are also matched with the TCF2 function.

Based on the observed results andthe explanations provided, the title of the intervention cannot be used to describe the function of the TCFs; The TCFs interact, not interfere. Interaction is a kind of dialogue; these fields provide the necessary data and information to the subject of the study, and accordingly the subject of the study, cell lines in the present study, show specific behavior as a result of the aforementioned interaction. Since the change in the behavior of the cell lines occurred without any kind of physical intervention, it seems that cells in their culture medium have encountered some information and data which result in altering their tendency towards death or survival. This influence, which is independent of physical (hardware) intervention, is named the "software effect" by Taheri (Taheri, 2013). According to Taheri, behind the physical characteristic (hardware) of the cells, there is software that manages every single responsibility, reaction, function etc. related to the cell survival. In other words, there is a mind at the cellular level that allows the cells to receive data and information under the influence of TCFs. Previously, the theory of the existence of the mind of matter has been studied based on scientific evidence (Taheri et al., 2022). In this study, the function of the mind in living cells in receiving death and survival information was examined and confirmed empirically.

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# Investigating the Behavioral Variety of Cell Lines Under the Effect of Taheri Consciousness Fields

According to Taheri's theory, the Variable T-Consciousness Fields (TCFs) are subsets of the Cosmic Consciousness Network. These fields possess non-material and non-energetic properties, while serving various functionalities. When the subject of study, be it a living organism or non-living (matter or energy), is affected by the TCFs, certain information is conveyed through these fields. The receptivity to this information and interaction with the fields are facilitated through the subject's mind (the subject of study).

Mohammad Ali Taheri has referred to the influence of T-Consciousness Fields (TCFs) as the "Software Effect". In this perspective, much like how computer hardware requires software to operate and execute tasks correctly, all components of the physical universe also require a 'software program' to display specific behaviors and functionalities. The effect of various TCFs on these programs, coupled with the transmission of distinct information, can lead to changes in the systems under investigation. The study of life and death behaviors in different cell lines, under the effect of the TCFs, has provided empirical evidence in support of Taheri's theories. A summary of the results from these experiments is provided in this issue.

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