

Survival and Infectivity of SARS-CoV-2 under the Influence of Taheri Consciousness Fields in Different pHs

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Abstract

The SARS-CoV-2 virus causes coronavirus disease 2019 (COVID-19), which has become a severe and important public health problem globally since 2019. Studies have shown that the pH of the environment is a critical factor for the entry of a virus into cells and the fusion of its envelope with the membrane of the host cells. Taheri Consciousness Fields (TCFs) 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 investigate the effects of two TCFs (1 and 2) on the survival and infectivity of SARS-CoV-2 across different pH values. Viruses (1×10^6 TCID₅₀) were exposed to several pH conditions (pH: 2-12) at room temperature for one day. Cytopathic effect (CPE) monitoring and the 50% tissue culture infectious dose (TCID₅₀) were used to evaluate virus survival and infectivity. The results demonstrated that the two TCFs completely inactivated SARS-CoV-2 at pH values of 4, 9.5, and 11, and significantly reduced viral titers at pH 6, 7.2, and 8.5. These findings indicate that TCFs, as a qualitative intervention, possess the potential to inactivate SARS-CoV-2. Nevertheless, further studies are required to elucidate the underlying mechanisms by which TCFs influence viral survival and infectivity.

Keywords: Taheri Consciousness Fields, T-Consciousness, COVID-19, SARS-CoV-2, pH

Introduction

The emergence of coronavirus disease 2019 (COVID-19) in China and its rapid spread have posed a global health emergency (Ciotti et al., 2019). Ecosystem-related factors such as pH, temperature, disinfectants, objects, food, etc., play a critical role in the survival rate of SARS-CoV-2 outside the body and in the laboratory environment. Furthermore, studies have shown that pH is an important factor in the fusion of the viral envelope with the host cell membrane and in cell entry (Earp et al., 2004). It is easier for SARS-CoV-2 to attach to ACE2 (angiotensin-converting enzyme 2) at lower cytosolic pH (Cure et al., 2020).

In the present century, the nature of consciousness and its place in science have received much attention, and many philosophical and scientific theories have been presented in this field. In the 1980s, Mohammad Ali Taheri introduced new fields of non-material and non-energy nature, which are called T-Consciousness Fields (TCFs). These fields, which have diverse functions, are a subset of the Cosmic Consciousness Network (CCN). It is possible to study the effects of TCFs on living and non-living beings such as plants, animals, microorganisms, materials, etc. (Taheri, 2013). This feature of operational research has led researchers to design numerous experiments to record the effects of these non-frequency fields.

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

This study aimed to investigate the effect of two TCFs (1 and 2) on the survival and infectivity of SARS-CoV-2 in different pHs. Viruses were exposed to several pH conditions

(pH:2-12) at room temperature for only one day. The cytopathic effect (CPE) and the 50% tissue culture infectious dose (TCID50) were used to evaluate virus survival and infectivity.

Material and Methods

Application of Taheri Consciousness Fields

TCFs were applied to the samples according to the protocols regulated by the COSMOintel research center (www.COSMOintel.com). More details are provided in the Common Considerations section of this issue. In the present study, the TCFs were used exactly at the same time as virus inoculation in cell culture flasks in laboratory TCFs treatment groups.

Culturing of Vero cells and SARS-CoV-2

Vero cells preparation

Vero cell line was cultured in a T-75 flask with 10% FBS (fetal bovine serum) (Gibco) and 90% DMEM medium (Gibco) and incubated at 37 °C and 5% CO₂ until 80% confluency (Rosenke et al., 2021).

Virus isolation and culturing

SARS-CoV-2 was isolated from samples of COVID-19 positive patients according to their real-time PCR analysis (Cycle threshold: 10). A biosafety level 3 (BSL-3) laboratory was used for all surveys on the virus (WHO, 2020). SARS-CoV-2 propagation and a TCID50 assay were done. Cells and viruses were seeded in a 96-well plate, and the TCID50 assay was evaluated using the Reed-Muench method (Reed et al., 1938). Lastly, based on the analysis of the results, virus cultures with log TCID50/mL ~6 and Ct value 11 were selected for inoculation.

Effect of TCFs on survival and infectivity of SARS-CoV-2 under different pHs

VTMs (Viral transport media) with different pHs ranging from 2 to 11 were prepared using hydrochloric acid (5M and 1M HCl) and

sodium hydroxide (1N NaOH) according to standard international protocols. SARS-CoV-2 supernatant suspension (log TCID50/mL~6) was added to the VTMs and incubated at room temperature (20-25 °C). For each pH condition, three replications were used, and each sample was divided into two groups: the TCFs treatment group and the control group (without TCFs treatment). Survival and infectivity were measured up to one day after inoculation. Virus titer was calculated by the TCID50 assay method described by Reed and Muench (Reed et al., 1938).

Virus precipitation (Concentration)

The polyethylene glycol (PEG) precipitation method was utilized in this study to eliminate cytotoxic agents of cell culture and/or PCR inhibitors. Samples were blended with a PEG 6000 stock solution and agitated in a shaking incubator at 150 rpm and 4 °C for 8 h. Then, the supernatant was centrifuged for 50 min at 3600×g. The PEG-containing supernatants were removed, and the resultant pellet was dissolved in phosphate-buffered saline (PBS) and re-centrifuged for 40 min at 4000×g. The

resultant supernatant was filtered through a 0.2 µm sterile membrane filter, and 50 µL was added to the wells of a 96-well plate, which was then incubated at 37 °C and 5% CO₂ for TCID50 assessment. The wells were checked every 24 h for cytopathic effect (CPE), and results were reported after six days (Norouzbeigi et al., 2021).

Statistical analysis

Data were analyzed via SPSS software version 26 with a confidence level of 95%. An ANOVA test was used to recognize any significant differences between the samples.

Results

The results of the effect of simultaneous application of the two TCFs (1 and 2) on SARS-CoV-2 under different pHs are shown in Table 1. The virus was not detected at pH 2 and 12 in both treatment and control groups. Furthermore, the TCFs eliminated the virus at pH 4, 11, and 9.5, whereas active viruses were observed in the control group. Also, TCFs at pHs of 6, 7.2, and 8.5 significantly reduced the virus titer compared with the control group ($p < 0.05$).

Table 1. SARS-CoV-2 titer in the studied groups

No.	pH	Virus titer (TCID50)		
		Initial	Control group	TCFs
1	2.0	1×10^6	ND	ND
2	4.0	1×10^6	$1 \times 10^{3.3}$	ND*
3	6.0	1×10^6	1×10^5	$1 \times 10^{3.5}$ *
4	7.2	1×10^6	$1 \times 10^{5.2}$	$1 \times 10^{4.1}$ *
5	8.5	1×10^6	$1 \times 10^{4.6}$	1×10^3 *
6	9.5	1×10^6	$1 \times 10^{3.5}$	ND*
7	11.0	1×10^6	1×10^3	ND*
8	12.0	1×10^6	ND	ND

ND: Not detected, TCFs: simultaneous effect of Taheri Consciousness Fields (1 and 2). The asterisk (*) displays a significant difference ($p < 0.05$) between the TCFs treatment and control groups.

Discussion

Previous studies have shown that the infectivity of coronaviruses is influenced by changes in pH and temperature (Lamarre et al., 1989). A

critical step in the entry of a virus into cells is the fusion of its envelope with the host cell membrane (Earp et al., 2004).

The neutral and slightly acidic pH is optimal for the fusion of SARS-CoV-2, penetration into host target cells, and spike glycoprotein interaction with the *ACE2* receptor (Gallagher et al., 2001; Tang et al., 2020). Our results showed that SARS-CoV-2 survival was pH-dependent, with minimal survival at extreme acidic or alkaline conditions. Under intermediate pH values, the presence of TCFs significantly reduced viral titers compared to controls, indicating a potential antiviral effect. However, additional studies are needed to better understand the effects of the TCFs in different conditions.

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Conflicts of Interest

The authors declare no conflict of interest.

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