Biological Sciences

Teleportation of Unicellular Plants across Physical Barriers

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Introduction: **Our previous studies described ingress as well as egress images induced by magnetized fine iron particles attracted to the inherent electromagnetic activity of plant and animal tissues. Herein we tested whether electromagnetic activity of single cell plants can migrate across physical barriers.**

Methods: **Culture media of the unicellular plants, Euglena gracilis, was drawn into glass capillary tubes and sealed with a wax plug at either end. Each tube was painted with black ink to exclude light and four painted tubes were taped together. Each set of 4 blackened capillary tubes were immersed in a vial half-filled with either spring water or tap water. As a control an unpainted set of four tubes was immersed in spring water (3 sets, n=7). A similar experiment was set up with painted and unpainted, sealed micro-tubes containing Euglena cells (n=7). The surrounding liquid from each vial was examined microscopically every 24 hours.**

Results: **The liquid sampled from the vials containing the blackened capillary tubes in spring water showed Euglena organisms in all 14 experiments at days 1-5, but only 2/14 in the vials with tap water and 0/14 containing the unpainted capillary or micro-tubes, ANOVA, p≤0.05.**

Conclusions: **Euglena cells, confined in blackened glass capillary tubes or plastic micro-tubes were spontaneously transferred into the surrounding lighted solutions containing spring water but not from unpainted tubes. We propose that electromagnetic forms of these organisms can pass through physical barriers from unfavorable to more favorable environments.**

Euglena gracilis | glass capillary tubes |
Plastic microtubes | light exclusion

Introduction

Previously we found that fine iron particles in an iron staining solution applied to Mung bean leaves and human hairs induced egress images which were replicates of the leaf edge or hair follicles [1-3]. In another study images were obtained of subdermal follicles in vivo with the same techniques [4]. Evidence was presented that suggested that these egress images have an electromagnetic component [5].

In the present report, we studied the unicellular plant, Euglena gracilis, which was placed in sealed and darkened compartments in order to inhibit photosynthesis. We found that these mobile organisms could spontaneously migrate out of the darkened, i.e., unfavorable, sealed compartments into a more favorable environment consisting of surrounding lighted solutions.

Materials and Methods

Culture media containing Euglena gracilis, a one-celled mobile plant was obtained from Carolina Biological Supply, Co., Burlington, NC.

Protocol 1

Clear glass capillary tubes (World Precision Instrument, Inc., New Haven, CT) , 8 cm long, inside diameter 0.58 mm, were dipped into the Euglena culture media allowing immediate filling by capillary action up to 40% of the tube length. The outside of each tube was rolled dry and placed on a microscope stage to show the presence of numerous mobile Euglena organisms (Figure 1). The tip of each tube was then dipped in hot liquid wax, which on cooling formed a wax plug which sealed both ends. Next, each tube was painted with black ink in order to exclude light from the area encompassing the Euglena organisms.

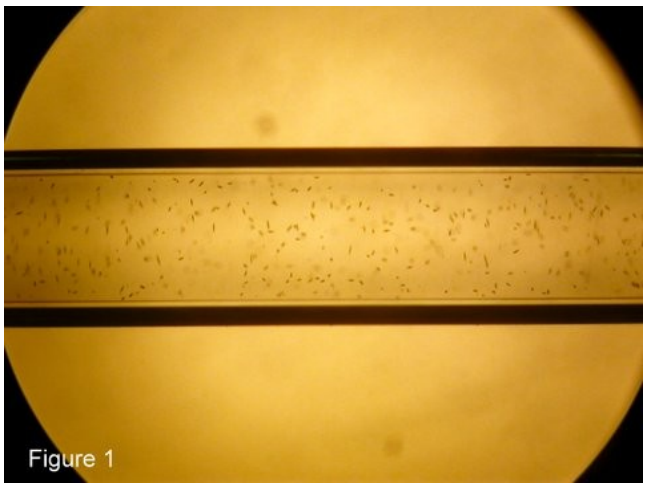

Figure 1. Microscopic view of a capillary tube that filled with mobile Euglena cells after being dipped into the tube containing Euglena culture media. The outside of each tube was wiped dry and devoid of any organisms. Magnification 10X.

Four capillary tubes were then taped together to be inserted into separate vials described in Figure 2. Three glass vials were filled with 5 ccs of the following solutions: 1.Spring water (pH 6.9), Carolina Biological Supply, Co., Burlington, NC.); 2. Tap water (pH 7.5). Each of the 2 sealed, blackened capillary tubes were immersed in the liquid of these vials (Figure 2 B, C). Samples from each of the vials filled a deep well slide (E) and examined microscopically every 24 for 5 days. (n=7).

As a control, the same procedure was used except that the capillary tubes were not coated with ink to exclude light for the enclosed Euglena cells. The unpainted capillary tubes were immersed, as described above, in spring water (Figure 2 D).

Conflict of Interest: No conflicts declared.

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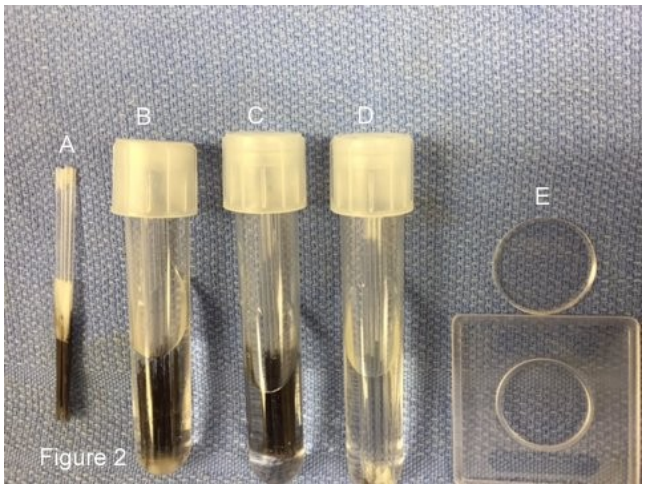

Figure 2. Two glass vials were each filled with 5 ccs of the following solutions: A. Spring water (pH 6.9); B. Tap water (pH 7.5). Each of the 4 sealed, blackened capillary tubes (A) were immersed in the liquid (vials B, C). An unblackened set of 4 wax sealed capillary tubes with mobile Euglena cells were immersed in a 3rd vial with spring water (D). Small samples of the immersion liquid were taken from each vial enough to fill deep well slides (Figure 2 E). The blackened area of each capillary tube measure 3-4 cm in length.

Protocol 2

Three (3) plastic micro-tubes (Fisher Scientific, MCT 1.5 ml, Denver, CO) were filled with Euglena containing culture media and sealed by a snap-cap. Two of the three were painted completely with black ink in order to exclude any ambient light. An example of a painted micro-tube is shown in Figure 3 A. Clear plastic vials were filled with 5 ccs of either spring or tap water (Figure 3 B, C, respectively) and a blackened and sealed micro-tube, each containing Euglena cells in culture media, was then placed into these vials.

Blackened micro-tubes (A) were filled with mobile Euglena cells and sealed with a snap cover before immersion in vials containing spring water (B) and tap water (C). An unpainted micro-tube with mobile Euglena cell was immersed in Spring water in vial C. Samples from each of the vials filled a deep well slide (E) and examined microscopically daily over a period of 5 days. The micro-tubes measured 4 cm in length and 0.8 cm at their greatest width.

As a control, an unpainted micro-tube containing Euglena culture media was similarly placed in a vial containing 5 ccs of spring water (Figure 3 D). At 1, 2, 3, 4 and 5 days small samples of the immersion liquids were taken from each vial enough to fill deep well slides (Figure 3 E) which were then snapped shut with their plastic cover. Samples from each vial were examined microscopically. The amount of liquid taken from each vial was replaced to maintain the original volume.

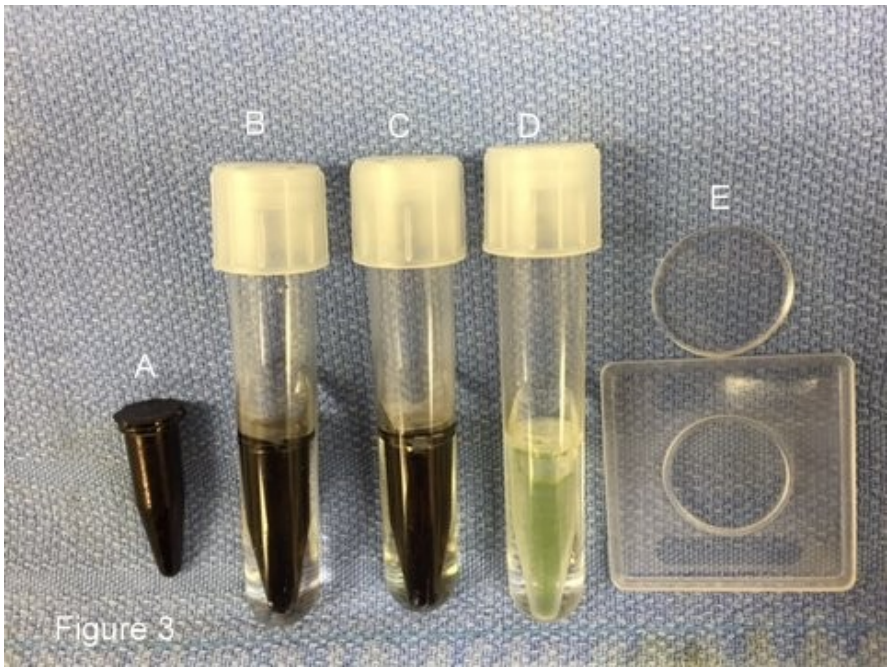

Figure 3. Blackened micro-tubes (A) were filled with mobile Euglena cells and sealed with a snap cover before immersion in vials containing spring water (B) and tap water (C). An unpainted micro-tube with mobile Euglena cell was immersed in Spring water in vial C. Samples from each of the vials filled a deep well slide (E) and examined microscopically daily over a period of 5 days. The micro-tubes measured 4 cm in length and 0.8 cm at their greatest width.

Statistical Analysis

Data are expressed as means ± the standard deviation. We compared the maximum number of mobile Euglena organisms found in the liquid taken from each vial at 24 and 48 hours using the one way ANOVA test for repeated measures to determine any significant difference between the four (4) groups (Protocol 1). To determine significant differences between any of two of the four groups we used a post-hoc Tukey test. P values ≤0.05 were considered significant.

Results

Protocol 1

Microscopic examination of the liquid sampled from the vials containing the blackened capillary tubes in spring water showed mobile Euglena organisms in all 7 experiments at 24 and 48 hours. However, the samples from the vials containing the blackened capillary tubes in tap water, over the same time periods, only showed organisms in 2 of the 7 experiments. In the vial containing spring water and the unpainted capillary tubes, none of the 7 experiments showed Euglena cells. In Table 1 we registered the maximum number of cells in each sample over the two time periods and applied one way ANOVA followed by a post hoc Tukey test to the data. This analysis indicated that there was a significant difference in the mean number of mobile cells recorded in spring water (8±6) than in tap water (2±4) and unpainted capillary tubes in spring water (0±0).

Table 1. Teleportation of a Living Unicellular Plant, Euglena gracilis

	1. Spring Water	2. Tap Water	3. Control
	5	5	0
	21	10	0
	1	0	0
	9	0	0
	4	0	0
	8	0	0
	10	0	0
average	**8**	2.1	0
SD	**6**	3.9	0

After One-way ANOVA test followed by the post-hoc Turkey Test

Column 1. vs.Column 2, p<0.05

Column 2. vs. Column 3, NS

Protocol 2

In the first 24 hours (Day 1) after establishing the setup described in Protocol 2 above, no mobile cells were observed in the samples drawn from the vials containing the blackened micro-tubes containing tap water or the unpainted micro-tube containing spring water (Figure 3, C D) . However a sample of solution from the vial containing the blackened micro-tube in spring water (Figure 3 B) showed a small number of active Euglena cells. On day 2, the tap water sample and the spring water sample from the vial containing the blackened and unpainted micro-tubes, respectively, were negative for any type of cell; whereas the spring water sample from the vial containing the blackened micro-tube showed a few mobile euglena cells.

From day 3 to day 5, only the samples taken from the solution in this vial (Figure 3B) showed numerous mobile Euglena organisms as well as relatively few immobile, encysted cells. Every day samples (days 1-5) from vials C and D (Figure 3) were negative in regard to any cells being present.

At the end of 5 days, the micro-tubes from each of the 3 vials were opened and liquid samples added to deep well slides. Under microscopic examination all specimens showed numerous, active (mobile) Euglena cells interspersed with occasional encysted cells. (Not shown).

Deep well slides were filled with spring water and tap water as control references for Protocol 1 and Protocol 2. These were examined daily for up to 10 days and were devoid of any cells during that time period.

Discussion

Major findings

Two protocols were established, in which aliquots of the culture media containing the mobile, unicellular plant, Euglena gracilis, was sealed in either blackened glass capillary tubes or in blackened plastic micro-tubes, meant to exclude ambient light. The sealed vessels were placed in glass vials which were filled with either, spring water or tap water exposed to ambient light. Controls consisted of unpainted capillary tubes or unpainted plastic micro-tubes containing Euglena organisms in vials with spring water. In protocol 1, there was a significant difference between the number of actively swimming Euglena cells in solutions taken from vials containing blackened capillary tubes in spring water (mean, 8±6) and samples from vials with painted capillary tubes in tap water (2±4) or unpainted capillary tubes in spring water (0±0), respectively. In Protocol 2, only the painted micro-tubes in spring water showed numerous active Euglena organisms at any time up to 5 days after the initial set-up. All other samples were negative from day 1 to day 5. Deep well slides that were filled with spring water and tap water alone were negative for organisms when viewed each day for 10 days.

Background

Teleportation has recently become a subject of investigation by physicists looking to apply quantum mechanics to actually demonstrate this phenomenon. A recent study by Pfaff et al [6] described the teleportation of sub-atomic particles for a distance of 3 meters. In regard to teleportation of a microorganism, Li et al. [7] described their theoretic scheme, using an electromechanical oscillator, in order to teleport "information or memories between two remote organisms. A simplified view of teleportation is that atoms or quantum bits can simultaneously exist in two or more states, superposition as a combined condition, i.e., entanglement. The prevalent view is that dissembling the entangle atoms and assembling them at a distance is the basis for teleportation at the quantum level and for larger entities [8]. The results of the present studies would suggest that living organisms can presumably teleport when presented with specific conditions such as an unfavorable/favorable environmental gradient.

Mechanisms

Possible explanations could be proposed to explain the apparent translocation of the euglena cells across the glass and plastic barriers described in the present report.

The cells could deform themselves so as to move through the pores of the glass capillary or plastic micro-tubes. Previous investigations have demonstrated that filters with pore sizes of 0.2 microns would prevent passage of appreciable numbers of cyanobacteria, dimensions 0.8-1.5 microns [9, 10]. Furthermore,

electron microscope determinations found pores in glass measured 60-400 A° [11]. Since the size of the Euglena cell averages 50x18 microns, it seems unlikely that these cells could be able to navigate through glass pores 4 orders of magnitude smaller than their body dimensions. In accordance with the quantum concepts of superposition and entanglement, we propose the following hypothesis: These unicellular organisms exist in two biological states, physical and electromagnetic which are replicas of each other and can be separable under specific environmental conditions, e.g., unfavorable/favorable gradients. In the present study the electromagnetic replicas of the actual Euglena cells pass through the blackened glass capillary and plastic micro-tube walls in order to occupy the lighted bathing solution.

Limitations

These and previous studies were performed in the unicellular plant Euglena gracilis. On that basis, it could be argued, that this teleportation behavior is specific for this organism or Genus. In this regard we have now extended these studies to a single cell animal, Stentor coeruleus. In particular we have detailed the life cycle of a dwarf form [11] which can emerge in an unfavorable environment and also is capable of migrating between sealed compartments along an unfavorable/ favorable environmental gradient (unpublished data). These types of teleportation remain to be tested in multicellular organisms.

Conclusions

The mobile unicellular plant, Euglena gracilis, was confined in glass capillary tubes or plastic micro-tubes which were blackened by painting with ink so as to exclude ambient light. The confined cells were the placed into clear glass vials containing solutions which were either favorable or unfavorable environments for these organisms. Unpainted capillary or micro-tubes served as controls. Daily samples of the bathing solutions were sampled over a period of five days and examined microscopically. Mobile Euglena cells were found each day only in favorable solutions, i.e., spring water, but were all but absent in tap water. The vials with favorable solutions containing unpainted tubes exposed to ambient light were also devoid of cells over the five day period. We propose that these studies suggest that teleported organisms are replicates composed of electromagnetic energy that can traverse sealed compartments.

Acknowledgements

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