ISSN 2321 – 7359 EISSN 2321 – 7367

discovery

Medical Science

The International Weekly Journal for Medicine

Drug effects in yeast mediated by scalar waves

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Publication History
Received: 23 March 2014
Accepted: 09 May 2014
Published: 21 May 2014

Citation
Ebbers JA, Meyl K. Drug effects in yeast mediated by scalar waves. *Medical Science*, 2014, 8(30), 58-62

ABSTRACT

Scalar waves (Tesla waves) represent a special class of longitudinal waves in electromagnetics according to the wave equation. The extension of Maxwell`s field equations by the term of scalar waves is stringent since the experimental proof of magnetic monopoles (Morris, 2009). The physical properties of magnetic scalar waves may qualify them as a means of signal transfer in biological systems. By the help of an experimental kit producing a resonant scalar waveto be used as a carrier wave for biological information, it can be shown that clotrimazole, a fungicide, exerts a growth inhibiting effect on yeast without any chemical contact. Possible implications for medical purposes are discussed.

Keywords: Scalar waves, Information Transfer, Drug Effects, Yeast, Undesired Drug Effects

Abbreviations: FDS – Federal Drug Administration, USA

1. INTRODUCTION

In 1900, a patent on „The Art of Transmitting Electrical Energy Through the Natural Mediums“ was granted to the Croatian electrical engineer and physicist Nikola Tesla (1856-1943) (Tesla, 2000). Tesla also emphasized on the medical significance of high frequent electrical currents (Heerd, 1997), but no theory was available at that time, to describe his practical findings. In 1990, a theoretical basis for Tesla`s work was found by expanding Maxwell`s field

Comparison:
This study provides experimental evidence for an additional signaling pathway beside direct chemical interaction in biological systems. This newly described additional signaling pathway is effected by a special electromagnetic wave, named scalar wave or longitudinal wave. The scalar wave is modulated by the information, thus being transferred to its biological target. Our study shows that the mere information transfer of a fungicide by scalar waves is able to induce a significant growth inhibition in yeast.

Scalar waves:
Synonyms: Tesla waves, longitudinal waves, generated by a system of Tesla coils forming a resonant transformer circuit.

Yeast:

A eukaryotic microorganism classified in the kingdom of Fungi. Here used as a model organism in order to show the effects of an information transfer.

theory by so called "Potential Vortexes" which are propagating as a longitudinal wave through space (Meyl, 2012a). According to the wave equation (Laplace) this new theory describes electric (or Tesla waves) as well as magnetic waves which could play a relevant role in biology (Meyl, 2012b; Meyl, 2010). These waves show special properties in comparison to common Hertzian waves (transverse waves). Applying the definition $\lambda \times f = c$ (the product of wave length and frequency defines the speed of propagation) means for transverse waves always the amount of the speed of light. Longitudinal waves however, propagating in the direction of an oscillating field pointer, will show a varying speed. This condition is of importance in respect to the degree of freedom for information transfer by wave modulation. In Hertzian waves, either wavelength or frequency may be modulated for information transfer. In scalar waves with their variable speeds, wavelength and frequency can be modulated simultaneously. Thus, the quantity of information carried by scalar waves is a multitude in comparison to Hertzian waves. These properties make scalar waves a good candidate for a fundamental principle of information transfer in biological systems. Special antennas however are needed on both sides: the source of information to be transferred as well as on the side of the biological target. This could be effected by benzene, purine and pyrimidine ring systems, which are wide spread in plants, animals and man. All of these ring systems have free electrons in common. According to the law of induction, a magnetic field (or scalar wave) passing by, will induce an electric current inside the ring system by moving the free electrons. This electric current provides the necessary energy for chemical reactions as e.g. the methylation of DNA bases (Figure 1). The selectivity of this process is ensured by wave modulation: only waves interfering with the target ring system according to the physical law of resonance are able to induce a reaction. Unfortunately, scalar waves cannot be measured by technical means up to now. Therefore, we developed an experimental set-up in order to detect the biological effects of scalar waves indirectly.

2. MATERIALS AND METHODS

2.1. Generation of Scalar Waves

Tesla built huge constructions in order to produce scalar waves. He worked with high voltages (several hundreds of kilovolts) at high power. His predominant aim was the wirelesstransfer of energy. For information transfer, low tension is sufficient. We therefore made use of a scalar wave experimental kit, which is commercially available (Meyl, 2014). The experimental kit is working at a low tension of 12 volts and in the range of some mA. It consists of two flat Tesla coils with ball shaped antennas. One of these identical constructions is functioning as a transmitter for scalar waves, the other one as a receiver. The Tesla coils of transmitter and receiver are connected with each other by a cable. The transmitter is run by a frequency generator which can be modulated in amplitude (AM). At a particular frequency, self-resonance of the whole system will be achieved. In our experiments, the resonant frequency varied between 6.7 and 7.2 MHz due to the field attenuation by the agar plates and the glass bottles containing the drug solution. Once the resonant frequency has been found, the feeding source may be reduced to nearby zero. This process is controlled by LEDs, which will glow in the receiver but not in the transmitter. At that moment, a stable, quasi self-sustaining resonant scalar wave field has been generated. This field may serve as a carrier of information. Figure 2 shows the circuit diagram of the experimental kit. According to the diagram, the maximum of the electric field (capacity) is located in the upper part, whereas the maximum of the magnetic field (inductivity) can be measured somewhere in the region of the flat coils (Meyl, 2013). As the magnetic scalar wave is useable as a transport medium for information, both - the substance with its information to be transferred and the biological target- have to be placed on the flat coils, the substance on the transmitter and the target on the receiver coil. This basic set-up was modified in our experiments by adding a second receiver coil. Now the source of information as well as the target was placed on one of the two receiver coils each, thus changing one energy receiver into a transmitter for information. In previous experiments we found out, that this disposal is improving the information transfer (Meyl, 2013).

2.2. Yeast (saccharomyces cerivisiae)

Common yeast (saccharomyces cerivisiae) was chosen as a biological target. This microorganism can be cultivated easily on a suitable culture medium (2% Glucose-Sabouraud agar in plastic petri dishes) at a temperature of 25º C. In order to maintain a constant cultivation temperature, the second receiver coil was installed in a glass incubator with a thermostatic controlled heating. The use of glass as material for the incubator is essential as plastic will strongly attenuate the electromagnetic field.200 mg of fresh common yeast as commercially available were dispersed in 0,5 ml sterile sodium chloride solution. Equal amounts of this suspension were seeded on the agar plate in order to produce as circular and identical colonies as possible. The surface of these colonies was measured and documented by a commercially available video microscope. Measurement was carried out initially after the explantation of the colonies and after 24 and 48 hours of continuous incubation and exposition to the scalar wave field.

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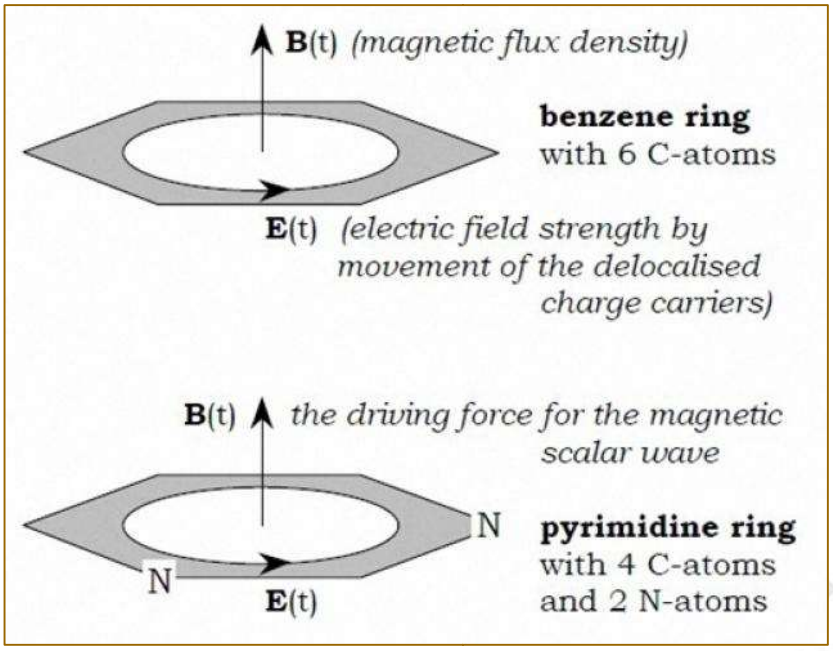

Figure 1

Magnetic scalar waves orthogonally passing a benzene ring will induce an electric current (photo credit: Meyl)

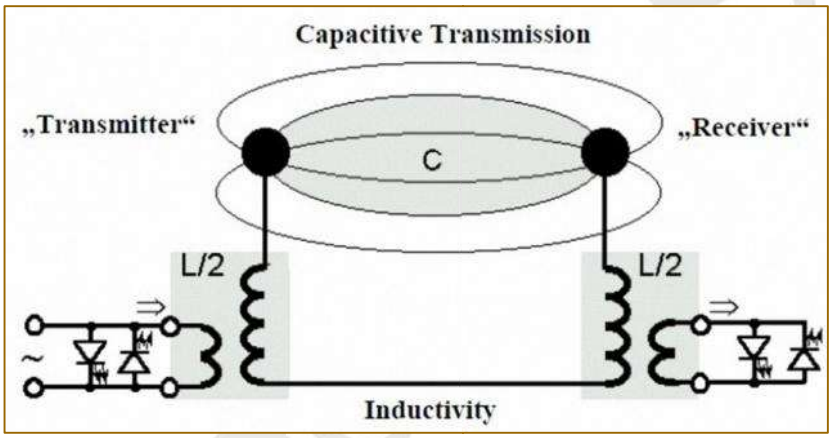

Figure 2

Circuit diagram of the experimental kit (photo credit: Meyl)

2.3. Statistics

Measured values were lined up in a spreadsheet. Mean values and standard errors were calculated. The results were subjected to a two-sided Student`s t-test. The average values of the colony surfaces before incubation and scalar wave radiation (start) were converted to 100%, the further growth also being calculated as percent values. Each graph (see Figure 3) was calculated on a basis of 30 colonies (n 30, fd 58).

2.4. Clotrimazole

Clotrimazole is an antifungal substance, widely used for the treatment of yeast infections in man and animals. Different clotrimazole mechanisms impair growth and division of the yeast cells: permeability of the cell wall is altered and enzymes inside the cell are blocked. The biosynthesis of ergosterol (an important compound of the yeast cell wall) is impaired and a breakdown of nuclear acids is induced. The chemical structure of clotrimazole shows three benzene and one imidazole ring, which is important for the transmission of information by the magnetic scalar field as pointed out above (FDA, 2011). The chemical structure of ergosterol as the yeast analog to cholesterol in animal cells also shows several benzene rings. In so far, the necessary condition of loop antennas on both sides, the transmitter with its drug information (clotrimazole) on one hand and the biological target (yeast) on the other is accomplished.

2.5. Controls

The information transfer of clotrimazole was match-paired by a control, using distilled water, filled in an identical bottle to that containing clotrimazole.

3. RESULTS

Growth of yeast colonies under direct (chemical) influence of clotrimazole

One agar plate was prepared as described above by implanting yeast colonies suspended in 0,9% sodium chloride. Another agar plate received yeast colonies suspended in a 60% clotrimazole solution. Both plates were incubated together under continuous scalar wave exposition. As expected, a highly significant ($p>0.0001$) growth inhibition in comparison to the H_2O control was observed under the direct chemical influence of clotrimazole after 24 hours (70%) as well as after 48 hours (107%), (Figure 3).

Growth of yeast colonies under continuous scalar wave radiation and clotrimazole information transfer

But also the transfer of the mere clotrimazole information by magnetic scalar waves inhibited the growth of yeast colonies statistically highly significant ($p >0.0001$) after 24 hours (29%) and 48 hours (49%) as well (Figure 3).

4. DISCUSSION

As expected, the direct (chemical) addition of clotrimazole showed the strongest growth inhibition: 70% after 24 hours and 107% after 48 hours respectively. On the other hand, the inhibition rates obtained by mere information transfer via scalar wave radiation reached 29% and 49% after 24 and 48 hours.A rough approach allows the

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Clotrimazole:

An antifungal medication. Here used as a source of information to be transferred to yeast by scalar waves.

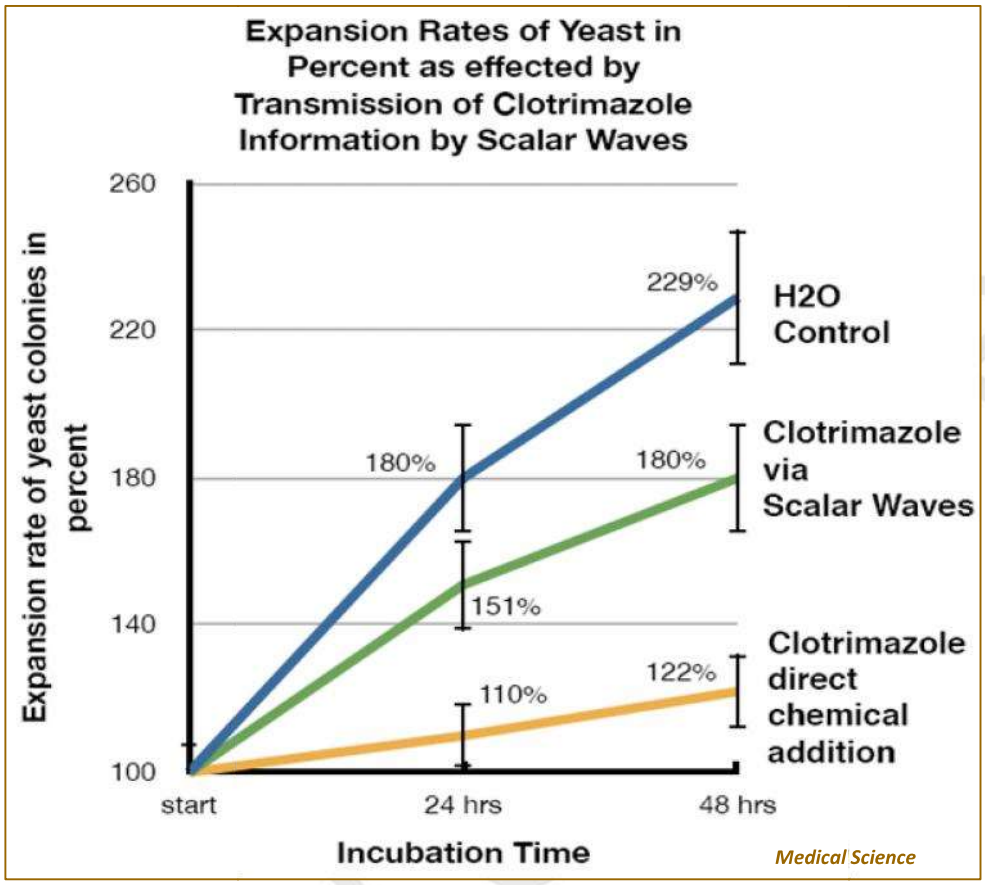

Figure 3

Expansion rates of yeast colonies in percent under the influence of direct chemical clotrimazole contact, of scalar wave transmission of clotrimazole information and H2O control (credit: Ebbers)

assumption that the information transfer by continuous scalar wave radiation is about half as effective as the direct chemical drug application. Drug effects in biological systems are normally mediated by direct chemical interaction. Our experiments show that there might be an additional pathway by means of physical information transfer. This physical pathway requires a special class of carrier waves named electric or magneticscalar wave. Very low intensity of scalar waves seems to be crucial in order to allow the uptake and release of the transported information. A successful information transport depends on the existence of loop antenna like structures on sides, the transmitted substance and the target. These loop antennas, represented by benzene rings or similar chemical molecules, are excited by the field of the coils. Benzene ring systems are widely spread in cells as components of their wall (cholesterol/ergosterol) and the bases of their nucleic acids (purine and pyrimidine rings) as well as in many pharmaceutical agents.

Undesired Drug Effects:
Often accompanying desired pharmaceutical effects, caused by unfavorable interference with cell metabolism.

5. CONCLUSION

Mediation of drug effects by scalar waves could provide some advantages: chemical application of pharmaceuticals needs metabolism and excretion. This process may cause unwanted drug effects. Scalar wave transmitted pharmaceutical effects do not seem to be subordinated to such metabolic needs. Further experiments in complex cell systems such as mammalians might show that the rate of undesired side effects could be reduced. The combination of both pathways, the chemical and the physical, might enhance the desired therapeutic effect without increase of undesired side effects.

SUMMARY OF RESEARCH

1. Biological systems seem to use a special kind of electromagnetics (scalar waves) for signaling. This could also explain why biological systems are only weakly influenced by conventional Hertzian waves.

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2. Scalar waves need benzene ring like structures at the source of information and the biological target as well. The free electrons circulating in the ring are excited by a magnetic scalar wave passing by according to the law of induction. These micro currents provide the necessary energy for the translation of the information transported by the scalar wave.
3. In a yeast model, it can be shown that a growth inhibiting effect of a fungicide can be achieved by mere information transfer via scalar waves.

FUTURE ISSUES

Supplementary application of drug effects mediated by scalar waves could develop to be a useful tool to reduce unwanted side effects of pharmaceuticals.

DISCLOSURE STATEMENT

Dr.Johannes A. Ebbers and Prof.Dr.ing.Konstantin Meyl declare that there is no actual or potential conflict of interest including any financial, personal or other relationship with other people or organizations that could inappropriately influence, or be perceived to influence, this work.

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