ISSN: 2640-4133

Review Article

Advances in Bioengineering & Biomedical Science Research

Ultra-Weak Cell Radiation as an Impulse to Activate Biological Signal Transmission Paths

Erich Ebner

Hoher Weg 2, 99425 Weimar, Germany

*Corresponding author

Erich Ebner, Hoher Weg 2, 99425 Weimar, Germany, E-mail: erich.ebner@gmx.de

Submitted: 15 July 2021; **Accepted:** 19 July 2021; **Published:** 31 July 2021

Citation: *Erich Ebner (2021) Ultra-Weak Cell Radiation as an Impulse to Activate Biological Signal Transmission Paths. Adv Bioeng Biomed Sci Res 4(3): 75-77.*

Abstract

Basic physical research at the beginning of the 20th century developed concepts of the energetic properties of atoms and molecules with quantum mechanics, which increasingly also included biological structures. Considerations of a "charge transfer" or also known as "donor-acceptor interactions" of the movement of electrons between molecular structures developed. This energetic process is the basis of the ultra-weak cell radiation, which is to be discussed as the basis for the activation of the molecular signal transmission.

Keywords: Ultra-Weak Cell Radiation, Cellular Signal Transmission

Introduction

100 years ago Alexander Gurwitsch discovered a radiation phenomenon, which he saw in connection with the mitosis of germinating seeds and therefore called "mitogenic radiation" [2, 3]. Despite great international interest in this phenomenon, it was only through technical developments that the radiation was measured and objectified. The most varied attempts at interpretation reveal a tendency that is classified as cell communication. And this seems to be the basis for the interplay of physical forces and molecular organic matter and the resulting regulatory processes.

Discussion

Communication is an increasingly important topic in the natural sciences. The connection of inner states, which can be represented in communication systems, increases the understanding of natural processes. The deepening of these relationships in relation to biological processes inevitably leads to a better understanding of physiological and molecular biological conditions. Only the knowledge of the structural unit of matter can clarify information with regard to the state variables and their interrelationships in biological processes.

The cell is the structural unit of life. The structure and its organization are laid down in the genes. The cellular activity of the most diverse cells of highly specialized plant and animal organisms with one another therefore requires signal transmission and control in order to guarantee a specific and uniform functional performance. Our current understanding of signal transmission relates to soil molecules, a molecular structural design.

This interpretation is currently the common basis. It is initially plausible. But messenger substances are high-molecular systems that require energies and signals for their functional processes. It therefore seems necessary to take a closer look at the evolutionary development of matter into biological compounds through to complex molecules that have developed structurally energetic forms of self-regulation. This transition of matter into organic forms may have been one of the first properties of evolution. This means making considerations that have led to the formation of organic matter based on physical conditions. In this sense, Heisenberg stated: "Energy rules matter".

The first organic compounds, which were probably formed with the addition of energy according to the laws of chaos, were subject from the outset to the laws of physics, the laws of nature such as gravitation and magnetism. Molecular compounds developed under this influence and these formative conditions. Think about the potential of molecules when you think of technological developments. And with these thoughts, one can basically build a bridge to highly developed organic systems.

Magnetism per se describes the laws of the magnetic field and electromagnetic radiation. The observation of the magnetic field in relation to organic matter is divided into paramagnetism and diamagnetism separately with regard to the spin direction of the molecular energy, with diamagnetism in the foreground in large

molecules. When considering the topic, this general description assumes that there is a connection or, as already said, a dependency of biologic systems on the earth's magnetic field as an environmental factor. This relationship can be explained quantum mechanically.

The earth's magnetic field as an applied field leads to the induction of a magnetic moment in an organic molecule by triggering currents in the electron distribution. Expressed in general terms, it is defined as torque and refers to the orbital torque of the electrons with the spin as a vector quantity. This quantity is the quantum-mechanically describable property of elementary particles such as electrons. The spin was introduced into the theory by G. Uhlenbeck and S. A. Gougsmit in 1925 and later refined by P. A. M. Dirac. The magnetic moment in its relation to the angular momentum or orbital angular momentum as well as the magnetic spin energy of the electrons result in an energy status that can be described as field energy depending on the physical fields and is ultimately emitted as electromagnetic waves.

Due to the dualistic properties of the elementary particles, electromagnetic radiation is defined as photons or as a wave function. The emitted photons can transfer their energy to electrons in a receiving system, thus closing the circle. Physical forces and molecular structures thus form a functional unit.

The mentioned signal transmission to guarantee a closed functional performance of biological systems finds an extension of the understanding through those original energies, which are triggered as impulsive photon radiation.

The ultra-weak radiation discovered by Gurwitsch, which he saw in connection with cell division, can be measured and defined in its spectra. The working group around Popp carried out extensive investigations according to physical-biological aspects [6, 7]. In the spectrum of activity, the UV radiation seems to be at the center of the effect. This also seems understandable, since this radiation area has a high energetic effect and is nevertheless effective in a biological sense, as can be deduced from photosynthesis, for example. Here, as in general, the energy transfer can be understood as electron transport [8, 9].

But how can one explain the diversity of communications with messenger substances, cell division and other processes in cells? Systemically, one can imagine the processes as stochastic processes. But there are obviously defined laws hidden behind it. According to the existing opinion (5), communication takes place by means of the modeled infrared radiation and UV radiation. The spectral range of UV light is itself defined by a broad band of radiation frequencies. The effectiveness of the different frequencies on the different cell formations should correspond to a code. The specialized tissue types with the specific functions could therefore receive different impulses via the excited messenger molecules and their signal chains. As a result of a general resonance behavior of the biological molecules or the structures towards the radiation, a coherence of the light is to be expected and thus a communication system can develop [4]. Resonance means the co-oscillation of a vibratory system that is bound to another vibratory system. This results in a defined effect that includes a controlling function. The resonance thus includes an energy transfer between two coupled oscillating systems, which are effective when both parts have the same frequencies.

With its definable radiation properties, this ultra-weak cell self-radiation could control the biological dynamic function of molecules as well as control and control tissue-like cell systems in the sense of a feedback, as one has to imagine during the constant cell renewal of the body tissue. The aging and thus the decay of tissue cells or the loss as a result of traumatic events could arise at this signal level and activate the molecular signal systems.

All in all, it can be said that the self-renewal of biological systems was one of the first fundamental properties of evolution. But without the interaction or, to put it more emphatically, without the dominance of physical forces and their phenomena such as radiation compared to the first early biological structures, development would not have been possible. The ultra-weak photon emission can only be explained by quantum mechanically interpretable energy developments. On this basis, impulses for signal chains can be triggered.

Conclusion

The energy output in the interplay of basic physical processes and molecular biological structures and their function cannot be refuted. Even if the appearance of ultra-weak cell radiation currently has to be considered across the board, it implies the need for further in- depth studies in order to describe the basics of their formation, influenceability and stimulation function in more detail. In principle, however, whole-body experiments cannot continue. But they have to be continued on a specific molecular level, because the energetic references are deficient. Certainly, the knowledge of the molecular signal transmission pathways has been clarified to a great extent. But an expansion of knowledge through the use of energetic processes, as shown above, with the link of ultra-weak radiation according to quantum mechanical interpretation, offers itself, and one can expect that functional conditions will be even better explainable and thus more understandable.

References

1. Ebner E (2017) Ultra-weak cell radiation - an intercellular communicative system? Shaker Verlag 2017: 1-180.
2. Gurwitsch AG (1923) Arch Entw Mech Org 100: 11-40.
3. Gurwitch AG, LD Gurwitsch (1943) Twenty years of mitogenetic radiation. Emergence, development and perspectives. Uspekhi Sovremennoii Biologi 16: 305-334.
4. Klima H, FA Popp (1983) Kohärenz in der Biologie am Beispiel der ultraschwachen Photonenemission Atominstitut der österreichischen Universität Wien 1983: 191-208
5. Kohn A, P Fuchs (1970) Communication in cell communities. Curr Top Microbiol Immunol 52: 94-141.
6. Popp FA (1973) Weak quantization. J Math Phys 14: 604-607.
7. Popp FA, B Ruth, W Bahr, J Böhm, P Grass, et al. (1981) Emission ov visible and ultraviolet radiation by active biological systems Collectiva Phenomena. Gordon and Breach Science Publishers Inc 3: 187-214.
8. Shen K, R van (2004) Wijk Biophotons and Biophotonics

Springer Berlin.
9. Szent Györgyi A (1968) Bioelectronics - Intermolecular electron transfer may play a major role in biological regulation, and cancer. Science 161: 988-990.

Copyright: *©2021 Erich Ebner. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.*