《生物科学杂志(ISSN 2958-4035)》
Journal of Biological Sciences (ISSN 2958-4035)

ChengZhu Science™

Serial in November, 2022

ChengZhu Science Research Center Limited

(Hong Kong Registration NO. 80561228)

Journal article DOI is registered via JiangXi Province ChengZhu Environmental Engineering Company Ltd, with Crossref membership (DOI prefix 10.58473)

出版人： 刘焕 香江出版社有限公司

Publisher: Liu Huan, Xiangjiang Publishing Company Ltd.

ISSN 2958-4035



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Article 6-7. The Synthesis of Biological Antibiotics and Its Application on Bio-medicine/生物抗生素合成与在生物医药中的应用

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DOI: https://doi.org/10.58473/JBS0014

Formally published on 30/11/2022; Latest revised on 02/09/2026.

Abstract

Biophysics simulation of bio-electromagnetic waves is designed to enhance the synthesis of vegetation antibiotics, which is helpful to bio-medicine production, and the relevant theories of Traditional Chinese Medicine are discussed.

Key words: Biophysics Simulation, Bio-Electromagnetic Waves, Vegetation Antibiotics, Traditional Chinese Medicine, Biomedicine.

Introduction

In previous articles, the immunology of host cells becomes the key to resist the invasive pathogen. Nevertheless, there are some exceptions that the immunological potential of host cells, which relies on the synthesis of antibody/antibiotics in host cells, may not be sufficient to resist the invasive pathogen (such as congenital defect of rat species against a specific pathogen). Then the vegetation antibiotics is helpful as complementary solution. The steps of synthesis of vegetation antibiotics are described below. The potential of inoculation of microbial vaccine in animals such us rats is also discussed for bio-medicine production, which provides solutions for human host cells.

Methods

Step 1. N×N samples of a vegetation species, which has been identified to be helpful in biomedicine, are cultivated during simulation of different electromagnetic wave conditions;

Step 2. Different frequency (or different wavelength) of electromagnetic wave are simulated, and labeled as F1, F2, ..., Fn;

Step 3. Metabolomics test is conducted individually after cultivation in F1, F2,..., Fn, respectively, and the method of metabolomics test is designed by my another article [5];

Step 4. Under each simulated frequency of electromagnetic wave, different intensities of electromagnetic wave are simulated, and labeled as I1, I2, ..., and In;

Step 5. Metabolomics test is conducted individually after cultivation in I1, I2,...In, respectively. The amount of N×N metabolomics tests are conducted in total.

Step 6. In total N×N different samples of vegetation antibiotics are abstracted from each different cultivation condition (The method of this abstraction is the same as the preparation of Traditional Chinese Medicine);

Step 7. Each sample of vegetation antibiotics is injected into the invasive simulation of pathogens targeting the host cells of rats respectively, in combination with the training of host cells discussed in other articles [1][2];

Step 8. The infection of host cells are observed, and the effectiveness of each sample of vegetation antibiotics is decided correspondingly.

To improve the biophysical training method, the simulation method of time-varying electromagnetic waves has been designed in another biophysics article [3], which can be used to replace the static intensity specified in Step 4 above. For the vegetation cells' cultivation, the frequency range of biophysics simulation must include two key ranges: one is the frequency range of bio-electromagnetic waves released by vegetation species, and the other is the frequency range of UV light waves [3].

Discussion

It is expected that a combination of antibiotics from both host cells and vegetation leads to the best solution, and a combination of different vegetation antibiotics is more effective. However, the 'dead' antibiotics abstracted from vegetation is not as effective as 'living' antibody/antibiotics in host cells, due to the evolved resistance of pathogens against the static or constant antibiotics. Actually, there are lots of cases that insect pests frequently evolve into resistance to VERY toxic pesticides, which is the same phenomenon. Please note: the abstraction of vegetation antibiotics here is on the basis of ancient preparation method of Chinese medicine, and the advantages of this is to consider all the vegetation metabolites cultivated in Lab as the whole substances for antibiotics, rather than separating a specific chemistry species from the vegetation metabolites, which can be proven by that plant resistance (or antibiotics) substances usually contain multiple biochemistry species discussed in other articles. Another advantage of ancient preparation of Chinese medicine is to provide additional nutrition for host cells. During effective vegetation antibiotics condition, the invasive pathogens are usually dormant so that the competition in nutrition between host cells and pathogens is minimized. Otherwise the additional nutrition may benefit the pathogens rather than host cells.

There are three kinds of vegetation species selected in future research for better 'diversity of antibiotics': one is the *Ganoderma Lucidum* (I started to grow this from 2011), another is *Anoectochilus roxburghii* (Wall.) *Lindl.*(I started to grow this from 2016. Not only human species know this, but also wild pigs must be keen to look for this vegetation for remediation after injury), and the last one is rhizome of *Leguminosae* species, because the symbiosis of rhizobium in *Leguminosae* species leads to antibiotics with higher dynamics from both vegetation cells and rhizobium cells (not only vegetation cells but also rhizobium cells generate antibiotics/antibody mutually against exotic invasive pathogens). However, the inoculation of various rhizobium, which successfully lead to tumour in root system as symbiosis, is necessary. The reason of enriching rhizobium biodiversity has been discussed in other articles (the specificity of host-invasion interaction), which results in various antibiotics from both plant cells and microbial cells.

For the shading-habitat plant species, which suits shading environment only for growth, plants' leaves usually turns to be yellow when they are long-termly exposed to the intensive sunshine. Inversely, the leaves of sunshine-habitat plant species turn from green into yellow when they are shaded. For the shading habitat plant such as the *Anoectochilus roxburghii (Wall.) Lindl.* as well as *Ganoderma Lucidum*, the intensity of UV-B radiation must be reduced for the cultivation, as compared to the intensity used in other articles of this journal.

In addition to the synthesis of vegetation antibiotics for biomedicine, the inoculation of microbial vaccine in animals such us rats, pointed out in other article of this journal[4], also provides effective way of generating antibiotics for biomedicine production against invasive pathogens of similar genetic strains infecting human host cells. Please note: according to the Traditional Chinese Medicine, the biomedicine made from animal cells tends to be 'warm,' possibly due to too much animal axunge, which need to be incorporated into vegetation biomedicines (which tends to be 'cool') as mixtures for best biomedicines.

Summary of Bio-electromagnetism

From Article 6-1 to Article 6-7 of this journal, bio-electromagnetism becomes the common topic over these articles. Bio-electromagnetism is the inter-disciplinary research relating electromagnetism with its corresponding bio-organism, which has been widely applied in medical diagnosis, health monitoring and treatment so far [6].

External Qi in Qigong is definitely the bio-electromagnetic wave released by Qigong Practitioner, which essentially lies in the practitioner's ability to mobilize internal energy through mental focus, transforming into external 'energy field' or 'information field.' This energy field may possess various physical properties, such as electric fields, magnetic fields, and electromagnetic waves, which are radiative and

penetrative [7]. External Qi in Qigong has been commonly applied in medical treatment[9], such as killing and inhibiting cancer cells [8].

With the development of quantum resonance technology, detector of bio-electromagnetic wave become a kind of common instrument in medical diagnosis, including mental disorders, tumors, anesthesia, and cardiovascular diseases, as well as suboptimal health status monitoring [10]. Especially, the tera-hertz technique has effectively detected the representative frequencies of bio-electromagnetic waves (so called 'External Qi') released by Qigong Practitioner [11]. Relatively fewer research chooses plant to study its released bio-electromagnetic waves. The bio-electromagnetic waves with frequency range of 4.32×10^9 ～ 8.10×10^12 have been detected, which is released by seedling plant [12].

Quantum resonance is the key natural Law in the development of detector technology measuring bio-electromagnetic wave released by cell creatures. Correspondingly and inversely, the external biophysics simulation of bio-electromagnetic wave can be efficiently perceived by cells due to quantum resonance too, which can be utilized to enhance the relevant gene expression as immunology, synthesis of antibody/antibiotics, or gene therapy, because bio-electromagnetic waves are the bio-signals regulating the gene expression of cell biology. Based on this theory, the experiment design of Article 6-1 to Article 6-7 aims to target the relevant gene expression more accurately.

In fact, our eyes rely on the natural law of quantum resonance to perceive light waves. When light waves of different frequencies penetrate into the photosensory cells of the eye, electrons at different quantum orbitals inside atoms are excited correspondingly. These electrons then release different electrical signals that correspond to the different colors perceived by our eyes. The higher the intensity of a light wave at a given frequency, the more electrons are excited at the corresponding orbital, making the corresponding color brighter perceived by the eye's photosensory cells. The specificity between light wave with each frequency and the corresponding color perceived by our eyes, as well as the specificity between different intensity of light waves and the corresponding brightness of each color perceived by our eyes, are the key example to illustrate the underlying theory discussed above, aiming to enhance the relevant gene expression both qualitatively and quantitatively.

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