

Cell membrane potential and cancer  
Scott-Morley E.  
(Aesculus Clinic, Poole, Dorset, UK)

The role of the cell membrane potential is well known in the context of potassium and sodium ion exchange. The ion exchange mechanism is clear. There is evidence that the potential of the cell membrane is reduced in certain types of cancer.

Several authors have investigated the relationship between mycoplasma and cancer. Finally, the use of modulated radio frequencies for cancer treatment has been documented.

The aim of this work is to summarize these findings and consider further options for the treatment of chronic diseases, including cancer.

### Cell membrane potential

Electrical and chemical signals are the basis for the transmission of information in biological systems.

Electrical signals are used to transmit information over long distances, for example, in neurons, and chemical signals to transmit information over short distances. Some electro-acupuncturists believe that electrical signals are involved in the acupuncture mechanism. In the nervous system, electrical signals are triggered by a brief change in current in neurons, which creates a deviation in the electrical potential of the plasma membrane.

Membrane potential is the separation of positive and negative charges on the cell membrane. The result is an excess of a positive charge on the outside and a negative charge on the inside. It is customary to equate the external potential to zero, and to express the potential of the cell membrane in negative values. The potential of a healthy cell ranges from -70 mV to -90 mV.

### Jonah

Animal cells exist in controlled environment ions. Of greatest interest are the ions of potassium (K +), chlorine (Cl-), sodium (Na +) and calcium (Ca ++).

The human body is predominantly water. Water molecules are asymmetric: H + ions are located at an angle of 108 degrees. As a result, the polarized molecule is attracted to other polarized ions and molecules. The bonds are weak and ion exchange occurs.

Ion hydration is part of the ionic structure. The movement of ions across the lipid layer requires the loss of water ions. This phenomenon is energy-intensive, expensive and inefficient, so it does not happen. Therefore, it is necessary to transfer ions through the pores of the plasma membrane.

### Ion size

The actual size of the cloud of water molecules associated with a particular ion depends on the energy dynamics of the system. In living systems, everything

ions exist in one common solution forming stable hydrated ions of a similar nature. It should be noted that the larger the non-hydrated ion, the more dispersed its charge, and it is weaker attracts water. Thus, the larger the ion, the less hydrated it is, and the size of the hydrated ion is generally smaller.

$K^+ > Na^+$  but  $K^+$  hydrated  $< Na^+$  hydrated.

#### Cell pore size

There are many pores in the cell membrane through which  $K^+$  ions can pass, but too small for  $Na^+$  ions. The number of pores for  $Cl^-$  ions is less, and even fewer pores for  $Na^+$  and  $Ca^{++}$  ions. Thus, it is much easier for potassium ions to cross the cell membrane than for sodium, chlorine or calcium ions. The extracellular calcium concentration is very low, and the intracellular one is practically zero. There are also many insoluble anions in the cell - proteins, polypeptides, organophosphates, nutrients, etc. They behave like organic acids, releasing a hydrogen ion, which binds to oxygen and forms metabolic water, leaving a negative ion in the cell. As a result, a negative charge accumulates in the cytoplasm, and only positive ions are attracted. Consequently, potassium ions are concentrated inside the cell, and sodium ions outside.

This description is given to illustrate the dependence of ion exchange on the potential of the cell membrane. The change in membrane potential affects the physiology of the cell. If the optimal potential difference and chemical gradients are violated, the function of the cell will change.

#### Free radicals

The most important structural characteristic of an atom is the number of electrons in its outer shell. They determine the chemical behavior of an atom. If the outer shell of the atom is full, the atom does not enter into chemical reactions. Due to the tendency of atoms to a state of maximum stability, they fill the outer shell, losing electrons, or bind with other atoms, gaining common electrons to fill the outer shell.

Usually, when the bonds are broken, the molecule remains with an even number of unpaired electrons. But when weak bonds are broken, free radicals are formed. Free radicals are very unstable and quickly bind with other elements to replenish the missing number of electrons and restore stability. In general, free radicals attack the nearest stable molecule, stealing its electrons. The attacked molecule, losing electrons, itself becomes a free radical, forming a chain reaction.

Some free radicals are formed during metabolism. They are sometimes produced by the immune system to neutralize viruses and bacteria. Environmental influences such as pollution, radiation, cigarette smoke, herbicides and physical injury are the largest sources of free radicals. Usually the body copes with free radicals, but in the absence of antioxidants or with strong exposure to free radicals, organic damage occurs. The effects of free radicals increase with age.

The voltage of a healthy cell is about 70 mV. On contact with a free radical, the voltage drops to 15 mV. DNA contains a telemid chain, which ceases to function when the cell loses energy and stops receiving and transmitting signals. As a result, the cell mutates. There is a telemid chain in every cell of the body. During cell division, the telemid chain is shortened. It's a built-in aging clock! When the telemid chain becomes inactive or ends its life cycle, cells stop dividing and die. Adequate electrical voltage is required to maintain the cell's full lifespan. Cell tension is important for both longevity and quality of life.

#### Membrane potential and cancer

There are several studies that report significant cell depolarization in breast cancer compared to benign tumors. Transformed cells epithelium breasts especially sensitive to K<sup>+</sup> channel blockers. It was also noted that the localization skin over of the malignant tumor is electropositive.

Experimental studies on mice have shown that implantation of cytotoxic lymphoid cells leads to a decrease in the membrane potential to less than 20 mV.

#### Mycoplasma

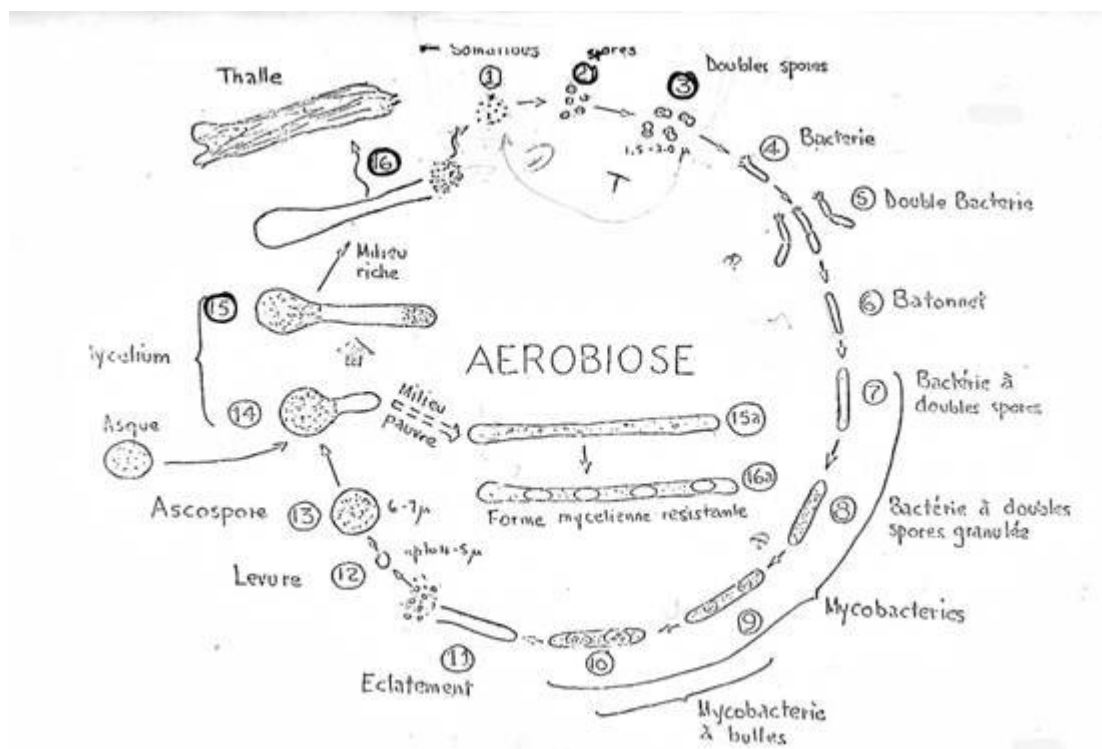
It is assumed that mycoplasma and other bacteria may be involved in masking surface antigens, and may also have other carcinogenic and immunosuppressive effects. Mycoplasma does not have a cell wall in the usual sense. They are very small, about the size of more complex viruses. Mycoplasma exhibits genetic variation and mutates easily. It can divide like bacteria or take on an adult form, while the nucleus continues to divide in the growing cell. The adult mycoplasma explodes, releasing many "seeds" that develop into new organisms. The seeds are very small and pass through bacterial filters, hence the term filterable bacteria even comes from. Unlike viruses, mycoplasma has a cellular phase, which does not allow it to be classified as a virus. Some types of mycoplasma are harmless to the human body, a number of authors consider them essential for life. Other forms, on the contrary, are pathogenic and live in red and white blood cells. They can be seen in the blood of cancer and AIDS patients.

Since 1920, mycoplasma has been secreted from various cancerous tissues. It can be observed in fresh blood samples in the dark field of a microscope. (Note: For a correct blood test, the patient must fast for 13 hours prior to analysis). The history of mycoplasma is long, many famous scientists were engaged in it: Antoine Beauchamp (France), Enderlein (Sweden), Von Bremmer (Germany), Naessens (France / Canada). Each researcher observing and describing the spores and evolutionary forms of mycoplasma has a different terminology and description of the life cycle. It is well known that emotional distress and trauma can contribute to the development of cancer. Stressful situations decrease the immune response and the suppressed immune system gives way to mycoplasma, which contributes to the development of cancer. IN

the literature describes the immunosuppressive effect and carcinogenic effect of mycoplasma.

Naessens (Canada) suggested that in a healthy host mycoplasma (which he calls stomatis) is observed in the form of an underdeveloped coccus or rod. He believes that growth factor secretions are controlled by the body's humoral responses. When immunity is impaired, the concentration of secretions increases, stimulating the development of a developed multinucleated adult form. Naessens concluded that when a tumor reaches a critical mass, white blood cells become paralyzed and stop recognizing cancer cells and producing antibodies. This observation is consistent with studies in which activity killer cells immune systems suppressed hexosamine formation through a tumor. N-acetyl-amino-sugars in cells

Tumor cells must be attacked by white blood cells during an immune response. The fact that the immune system stops noticing cancer cells suggests that there is an antigen masking effect. Cancer research has identified a cancer cell protein antigen called malignin. Other studies show that some of the antigens in cancer cells are produced by genes that are usually dormant. Malignin antigen is often coated with polysaccharide secretions, reducing exposure to antibodies and reducing the ability of white cells to recognize tumor cells. This raises the question of whether mycoplasma, which is known to produce polysaccharides, is involved in the masking process? Cancer cells produce their own growth factor, but a certain concentration level must be reached for the cell to divide.



Rice. one. Development cycle of somatid (by Gaston Naessens)

Macomber hypothesized that CG-like substances contain sialic acid residues, which can increase the negative charge of the membrane by adhesion to the cell surface of cancer cells, trophoblasts, sperm and T cells. This results in better protection of these cells and mycoplasma. CG adhesion to white blood cells can disrupt receptor binding in immune perception. Electrostatic rejection can also prevent white blood cells from attacking cancer cells.

Once the cancer cells are established, they organize an immunosuppressive effect by producing substances similar to retroviral proteins. They also produce histamines, which are immunosuppressive and contribute to the further development of cancer.

### Food

We observe that the development of mycoplasma can suppress the immune system and contribute to the early development of cancer. Therefore, it is important to maintain immunity when treating cancer. Mycoplasmas are suppressed by anionic agents. The use of saponifying plants such as yucca or cactus is beneficial. Antioxidants, vitamins, oxygen, etc. are also important components of treatment.

### Electric frequencies and cancer

In 1920, George Lakhovsky, a Russian émigré in France, postulated that cells resonate at certain frequencies. The frequency of each cell depends on its size and shape. Lakhovsky has worked to create a signal generator that emits millions of frequencies that pass through the subject's body. It is postulated that each cell will select and resonate at its own frequency, while ignoring other frequencies. The literature describes cases of successful cancer treatment using the Lakhovsky generator.

An American, Raymond Rife, developed a rectangular electric field generator in the acoustic frequency range in a spherical plasma installation. It was claimed that this device can kill a variety of pathogens using appropriate acoustic frequencies. There is an assumption that negative particles in the body are attracted to the anode. The degree of attraction depends on the frequency. Positive ions and oxygen ions are repelled from the anode. Thus, all charges around the device are susceptible to induction due to local disturbance of radio frequencies.

It is assumed that the maximum induction current is localized on the outside of the membrane in the same way that radio frequency currents are concentrated on the outside of the conductors. The intensity of the signal modulated acoustic frequencies for half the period is reduced to zero, thus a change of excited and relaxed states occurs on the membrane. In this case, the charge passes from the inner surface of the membrane to the outside, etc.

Pappas suggests that plasma membranes have different electrical resistance depending on the direction of the current. The influence of a high-frequency magnetic or electric field is to generate a dispersion of ions in tumor cells in such a way that the unidirectional movement of charges increases at each pulse. The cells are coming back

to the normal state of the potential on the membrane and lose the mitotic conditions characteristic of a low potential, they also become more sensitive to the effects of the immune system.

Rife argues that a frequency of 2127 Hz should be used for carcinoma, and 2008 Hz for sarcoma.

There are works describing the antibiotic effect of electrical oscillators, as well as the stimulation of white blood cells, possibly due to the secretion of a cytokine, by analogy with the processes occurring around the wound. This effect may be an important part of the immune response and immune activity in cancer. There are claims that after electrotherapy, white blood cells divide rapidly, and their hyperactivity lasts about 18 hours. If we assume that the attachment sites of CG-like secrets and other polysaccharides are destroyed by induced alternating currents, then the combined effect of the activity of white blood cells and their access to emerging tumor antigens will play an important role in the restoration of immunity.

### Discussion

Traditional cancer treatment focuses on either surgical removal of the tumor or chemotherapy or radiation therapy. Unfortunately, these treatments significantly weaken the immune system.

The main research is aimed at detecting a cancer gene, a cancer virus or the development of a cancer vaccine. Negligible attention is paid to the role of mycoplasma and membrane potentials.

If the tumor is large, surgical removal may be required. Rife recommends a 3 minute exposure with its generator with a 3 day break to eliminate toxicity. Even if a large tumor can be destroyed, a severe toxic load can disrupt kidney function, so surgery may be indicated.

In the early stages of cancer and in precancerous conditions, exposure an alternating electric field supports and stimulates the immune system. In such a situation, it is recommended to conduct a blood test in the dark field of a microscope to assess the development of mycoplasma. When precancerous pathology is detected, the use of electrical oscillations and bioresonance therapy promotes an anti-mycoplasmic immune response. In addition, supportive therapy with antioxidants, vitamin and mineral supplements, herbal therapy, proper nutrition, therapy with raw juices, the use of sea salt in food, avoiding refined sugars, and psychotherapy can be recommended to support the immune system.

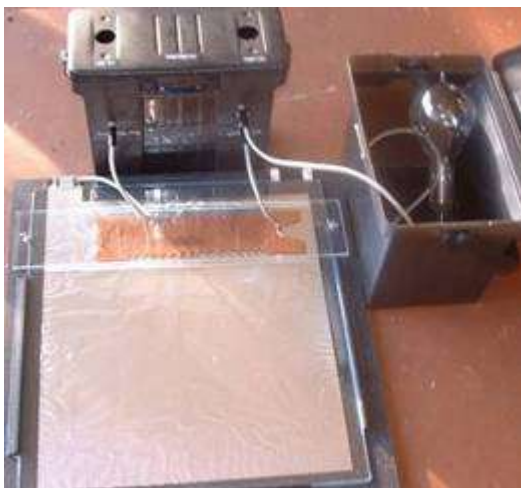
Applying bioresonance therapy, we are constantly faced with slow patient responses. In most cases it is easy to treat acute conditions and much more difficult to succeed in treating chronic conditions. I assume that the reason may be the reduced potential of the cell membrane, which significantly affects metabolism. Bioresonance therapy removes surface signals, but cannot replace missing ones. This requires other methods. For this, alternating electric or magnetic fields can be used. Of course we cannot

neglect the potential of the cell membrane. Myogen (a gene that controls cell division) can function at a cell membrane potential of 15 mV. This gene instructs the cell how to repair itself and divide. Unfortunately, he continues to work in the mutated cell. In turn, the P53 gene, which is responsible for the destruction of mutated cells, requires a membrane potential of more than 15 mV. Thus, when the cellular potential drops, diseased and mutated cells continue to multiply and do not

destroyed protective mechanisms. So way necessary track and support the potential of cells to treat cancer and other diseases.

How to solve the problem of cell membrane potential?

One of the enthusiastic patients provided my clinic with the Molecular Amplifier, which is a modified Lakhovsky generator and also has a plasma lamp. The high voltage is generated by a transformer using a Tesla coil. One pole is connected to an electrode insulated with a glass plate. The second electrode is placed on the glass above the first and is a copper strip in the form of a zigzag to generate different frequencies. A plasma lamp is connected to the output of the second electrode. The user places their bare feet on a glass plate and holds the plasma lamp. The device turns on and a high-intensity magnetic field passes through the person. The apparatus is said to enhance the natural frequencies of cells and increase the potential of the cell membrane.



Rice. 2

The patient who provided us with this equipment was diagnosed with breast cancer and used the device on a daily basis in combination with our natural therapies, resulting in a benign tumor that was successfully surgically removed. (Unfortunately, after a few months without treatment, the cancer reappeared. The patient is currently undergoing treatment.)

We investigated the 20-minute effect of the molecular enhancer on several volunteer patients. To assess the effect of the device, we measured the CTI before and after exposure. It was noted that

the measured values were more stable, measurements at many points returned to solid 50 units. scales.

Subjectively, the patients after the exposure session were: relaxed, felt a surge of energy and vivacity.

The effect of exposure was observed for about a day.

Two patients even decided to purchase a device for daily use.

#### Patient A. Chronic fatigue syndrome

There was a significant deterioration in the first week of exposure, but she continued with 40-minute sessions. In the second week, there was a significant improvement, the symptoms disappeared, the effect of bioresonance therapy increased.

Patient B., 80 years old. Diagnosis: prostate cancer

The patient presented with prostate cancer. Urination 4-5 times a night, the stream is weak. Bioresonance therapy improved the condition, the patient began to wake up only once a night, the intervals between urination during the day also increased. Urine flow improved slightly.

The patient underwent daily one-hour sessions of cell enhancer therapy for a month after which he reported that he stopped getting up at night, could keep urinating for up to 4-5 hours during the day, and that the urine flow improved significantly. Recent laboratory tests have shown no cancer cells.

Individual cases of application in no way replace full-fledged research, however, they give some hope. Currently, our blade is awaiting receipt of the cellular enhancer for long-term testing. I will report on the results at the next conference.

#### General notes on cancer therapy

Cancer treatment requires cell repair, which can only be achieved by understanding the process of cell damage and applying comprehensive treatment. Antioxidants are needed to get rid of free radicals, increase oxygen consumption, increase cell potential, correct polarity, identify and correct genetic disorders and actually affect the tumor.

##### 1. Oxygen

Oxygen deficiency in the body is associated with all major diseases including cancer, heart disease, respiratory disease, sinus problems, arthritis, athlete's foot, and others. Oxygen is the primary source of energy. It displaces free radicals, neutralizes toxins, destroys anaerobic bacteria, parasites and some viruses. Therefore, for all chronic diseases, it is necessary to increase the amount of oxygen consumed.

In cancer, cytochrome is damaged. Cytochrome is the main carrier of oxygen in the body, and, therefore, replacement is necessary. Large doses of vitamin C can help, and in a difficult situation, even intravenous administration. You can use Japanese reishi mushroom. The source of oxygen is sodium micelle - one of the enzymes that, when taken orally, give oxygen to the bloodstream.



## 2. Glycoproteins and phytonutrients

The work of the internal relationships necessary for the functioning of the cell depends on many factors. Cancer is associated with the glycosphingolipid antigen, which translates the initial glycoding information into cellular responses. Nutritional supplements should be prescribed that meet the body's need for phytonutrients.

## 3. Detoxification

Detoxification is an important part of cancer therapy to remove the released toxins. Drinking plenty of fluids is vital. Ideally, 6 liters of quality water per day. You can use the following scheme: one liter in the morning before breakfast, after which an intensive walk for 30 minutes, 7 km long. The walk will restore lymph flow after night stagnation. Another liter of water should be drunk after a walk (not all at once, but within an hour). The rest of the water should be evenly distributed throughout the rest of the day.

Coffee enemas are a controversial but effective detoxifier. Coffee beans contain biologically inactive derivatives of niacin (niacin, vitamin B13), which become active when roasted. When enough niacin is taken, a niacin splash occurs. Coffee enemas cause the bile ducts to dilate, which helps to remove toxic decomposition products of the cancer from the liver and dialysis of toxic constituents from the blood in the intestinal walls. Coffee enemas can be done several times a day. (Cancer patients shouldn't drink coffee!)

## 4. Pain relief

Pain relief is a necessary and important point in cancer treatment. With daily use of the molecular enhancer, over-the-counter pain relievers are sufficient in most cases.

## 5. Diet

Red meat should be avoided in the diet due to the high content of animal proteins. You should eat fresh fruits and vegetables, as well as freshly squeezed juices. Ideally, you should follow a diet according to your blood type.

## 6. Attack on cancer

BioX (CNX) - Herbal Blend, North American Indian recipe. 0.12–0.15 g should be taken daily. On superficial tumors, it can be taken topically.

Alternatively, mangosteen fruit juice is a source of xanthones (free radical scavenger).

## 7. Application of a molecular enhancer

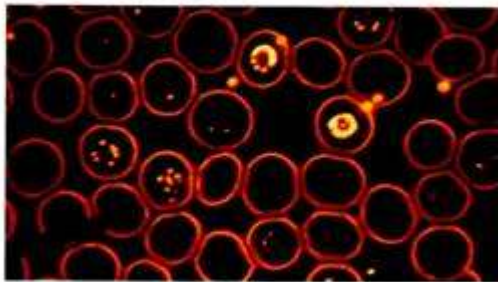
One hour a day. Improves oxygen consumption, improves cell potential, helps to restore cell function.

## 8. Bioresonance therapy

Bioresonance therapy and homeopathic treatment to restore energy balance in the meridian system.

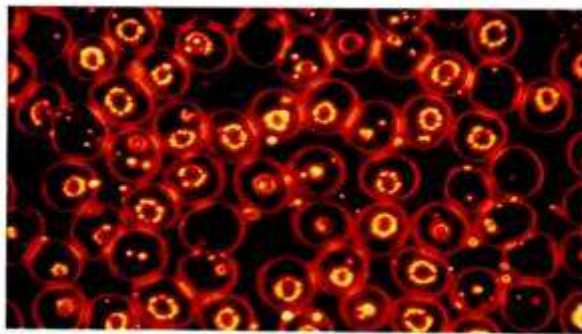
9. In addition to all of the above, the patient needs psychological and emotional therapy. Cancer creates fear in people. Psychological help is needed to adjust the patient to fight the disease. except

Moreover, in the work of Hamer (Germany) it is assumed that one of the factors in the development of oncological diseases is psychological trauma. It is necessary to work with emotional and mental blocks.



Red blood cells in early cancer

Rice. 3.Red blood cells at an early stage of cancer development



Red blood cells in advanced cancer

Rice. 4.Red blood cells in advanced cancer

This work is primarily aimed at drawing attention to the issue of the potential of the cell membrane as an important factor in the treatment of chronic diseases, including cancer and AIDS.

The author welcomes comments in English to [electrodoc@aol.com](mailto:electrodoc@aol.com).