

Mechanisms of formation of oncological and neurodegenerative diseases on the basis of viral theory of signal transduction

Abstract

Based on a review of some statements of the cellular theory a new scientific approach is proposed for understanding the mechanisms of oncology and neurodegenerative diseases. Signaling and energy processes of cells play a key role for formation of these diseases. Our position regarding the treatment of oncological and neurodegenerative diseases is shown. It is based on eliminating the causes of their formation.

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Introduction

Actually, oncology and neurodegeneration are two sides of the same coin. Both groups of diseases are considered to be the most important problems of modern humanity, the solution of which should be based on a review of fundamental principles of life. It is requested to review such a general biological theory as a cell theory.¹ In our recently published articles we present these issues and rehabilitate the cellular theory. The valid scientific decision is given showing that viruses are not obligate parasites and independent life forms, but they are migrating organelles of cells. In nature they implicate numerous useful and vital functions, but as we all know they can damage cellular forms of life.²⁻⁴ It appears to be, that according to the position of the original cell theory all the living being is composed of one or numerous cells. It is actually true that no viruses should be regarded as non-cellular forms of life. Moreover, if viruses can be considered as a part of us and our cells then they perform horizontal gene transfer rather intensively than it has been known in science before.⁵ The following is shown in our scientific articles; the formation of human's nervous activity and the difference of people from chimpanzees relying on our new biological theory.⁶ All that occurs in nature due to the acquired genome, so of the genome plasticity.

In accordance with extra (additional) position of cellular theory, the cells of multi cellular organisms are totipotency, that is, they are supplied with genetic potentialities of the cells for the given organism. According to their genetic information they are equivalent, but quite different from each other by expressions of various genes which cause morphological and functional diversity differentiation.⁷ The author's opinion on the given articles is fundamentally different from the additional statement of the cellular theory mentioned above. Taking into account that there is an acquired genome (except the basic one) the cells have already become not equivalent by genetic information during ontogenesis of the body. Therefore they differ from each other either by different expressions of various genes as well as by different groups of gene of the acquired genome. This is crucial for morphological and functional diversity (differentiation) of cells. It is a necessary condition for the appearance of highly specialized cells in multi cellular organisms, a vivid example for it a formation of the immune system of the human's body. So, in our works² and ⁵ cellular theories has been rehabilitated. Now there is an opportunity to research the mechanisms of such diseases, as oncology and neurodegeneration relying on strong scientific foundation.

Before we didn't understand the true place and the functions of viruses in nature. At the same time we didn't realize the genome plasticity and we had to investigate the mechanisms of various diseases (Oncological, neurodegenerative, autoimmune, mental and others) taking into account false general biological theories and data. It resembles the process of constructing scientific building on the "sand". In recent years, a breakthrough has occurred in our understanding of the molecular patho mechanisms of human diseases whereby most of our diseases are related to intra and intercellular communication disorders. The concept of signal transduction occupies a central place for explaining the mechanisms of formation of numerous diseases. Signal transduction is a bio-chemical process of perception and modification of extracellular signal, by cell and subsequent intracellular reaction in response to the signal. Thus, let's start with the presentation of our Viral theory of signal transduction. However, another important theory should be taken into consideration to understand the process of formation of the above-mentioned diseases. This is our Virus theory of energy system functioning of the cell.

Viral theory of signal transduction

There is a certain stage of signal transduction in the human body, animals, plants, fungi and in the colonies of microorganisms, that is, the signal transmission and the process by means of which one type of signal or stimulus turns into another. It is also realized due to the availability and functioning of viruses. Actually together with nervous and endocrine systems viruses (biocommunicators) provide the coordinated functioning of all its parts in multi cellular organisms. Moreover, multi cellular organism or colony of bacteria is integrated into the united whole.

Viral theory of functioning of the cell energy system

According to one of the theories of mitochondria and plastids origin as organelles of cells they appeared from free living prokaryotic cells. On a definite stage of the evolution of organic world mitochondria and plastids have been integrated into symbiosis (mutually beneficial living together) with eukaryotic cells. They carry out necessary functions there connected with energy systems of cells. Synthesis of ATP is performed by Mitochondria as a result of aerobic dissociation of organic compounds and photosynthesis is performed by plastids (chloroplasts). In accordance with other scientific data, bacterial cells can often have specific viruses – bacteriophages. Regulation of the

bacteria activity is performed, including mitochondria and plastids. Based on the above-mentioned scientific facts we can formulate the next viral theory, which is connected with functioning of energy system of cells.

Actually eukaryotic cells appeared to regulate the activity of their own organelles (mitochondria and plastids) by means of other organelles (bio communicators/viruses). It is one of the vivid examples for the function of signal transduction of viruses. Thus energy system of the cell (mitochondria and plastids) is properly integrated into organism. Cyano photosynthesis is the second important example on regulation of energy processes in the cell. It is known that due to the activity of the viruses just the ordinary bacteria become valuably cyanobacteria causing the process of photosynthesis. Based on the above-mentioned it can be concluded that viruses take an active part in energy processes of prokaryotic and eukaryotic cells. From the above presented virus theories it should be admitted that just viruses (bio communicators) in the human body provide a full function of signaling and ensure energy needs of the cells (mitochondrial function), that is, organized functioning of billions of cells is provided in multi cellular organism. Thanks to bio communicators and their ability to ensure signaling embryo is formed during prenatal period of human development. From a single original cell-zygote embryo is formed due to the process of differentiation. Later, in postnatal period due to the function of signal transduction bio communicator's intensity the growth of tissues, organs and human body are monitored. Numerous mechanisms are known in modern science and how these processes occur on biochemical and physiological levels.

Neuro humoral mechanisms for a number of regulatory processes are known too. However, our virus theory is proposed to understand genetic regulatory mechanisms at the level of DNA and RNA. Genome of the cells is being studied by genetics for a long time trying to find genetic reasons of formation of certain diseases. However, specific genes have not been found yet being fully responsible for the formation of such diseases as Alzheimer's or Parkinson. The situation is similar with many Oncological diseases. Only genes are known causing predisposition to some neurodegenerative or oncology diseases. Certainly for some diseases, specific genes have already been found which are responsible for pathological process. Actually only the main genome is primarily studied by genetic almost not taking into account the acquired cell genome which is formed as a result of horizontal gene transfer. Below, our definition about basic and acquired genome is given from our published article.⁵

Basic genome: It is a total combination of all genes received from fertilized egg and spermatozoid as a result of fertilization (nuclear, mitochondrial, plastid). It is a vertical transfer of genes. Acquired genome is a collection of all genes in organism derived from migrating organelle of cells (bio communicators) in the form of DNA and RNA molecules during embryonic and postembryonic periods. It is necessary to note that acquired genome can also be formed on the basis of existing genes (bio communicators), for example, by influence electric processes occurring in the nervous system of the body (virus theory of perception of the information, viral theory of formation of long-term memory and viral theory of functioning of the somatic nervous system)² and⁵ It occurs as a result of the activity of the sensory systems of the organism. Electromagnetic radiations (for example, UV radiation spectrum) of natural and artificial origin have also an important effect on the formation of acquired genome. The detailed description about it is given in virus theory of electro magneto reception.²⁻⁴ In fact, it turns out, that all changes occurring in external

and internal media of the organism are fixed (causing changes) in acquired genome. Those viruses that appeared to be significant are saved in reserves of a long-term memory of the organism. This is horizontal gene transfer. The acquired genome is individual for each somatic cell. If the process takes place in gametes, gene endo viruses^{1,3} are formed. It is already known that they are inherited from generation to generation. Thus, according to our rehabilitated virus theory, different viral theories and classify cation of genome on basic and acquired our understanding of the formation of oncology and neurodegenerative diseases should be presented. At the very beginning of the article it was informed that oncology and neurodegeneration are two sides of the same coin. Now we should explain why it is so in fact. It is known that viruses in the human body can cause a variety of diseases. It is clear that the absence or insufficient activity of a virus can cause a lot of diseases in human's organism, including animals and plants. After all, viruses (bio communicators) are migrating organelles of cells. They are part of us (people and other cellular life forms). We shouldn't forget that viruses in nature perform at least 10 important functions.² The absence of a valuable virome (species composition, quantity and biological activity of human viruses) disorders the function of signaling and regulation of energy processes both in cells and in the body. It leads to chaos and destabilization of the body. As a result, either oncology or neurodegenerative diseases are formed. Oncology is formed during unauthorized cell growth under conditions of destabilization of the organism. Any neurodegenerative disease occurs during massive loss of nervous cells. Actually the reason is common, but the consequences are different.

Treatment of oncology and neurodegenerative diseases

Our proposal regarding the treatment of oncology and neurodegenerative diseases is based on eliminating the causes of their formation. It is in rehabilitation of viral composition (qualitative aspects) by means of horizontal gene transfer – gene therapy. It is known that in the body the interaction of its parts is carried out due to various electric (nerve impulses and more) and chemical (hormones, neurotransmitters and others) processes. But now it is offered to take into account the existence of biological mediators too – bio communicators (containing DNA/RNA). If we remember the factors contributing to the formation of oncology and neurodegenerative diseases, it should be clear that they cause the destruction of bio communicators. Thus the function of signal transduction is disturbed causing diseases. If the scientists don't consider the existence of migratory organelles of cells – bio communicators, it is roughly similar to the study of the activity of the heart; for example, the heart consists only of atrium and ventricles and the valves are not components of the heart. Another example is connected with the investigation of the car not taking into account the wheels as the parts of the car.

Conclusion

- To fully understand the mechanisms of formation of various diseases (including cancer and neurodegenerative), it is necessary to revise basic and general biological concepts, such as, for example, cell theory.
- For the further development of biological sciences and medicine, it is extremely important to understand the true place and role of viruses in nature. It is also necessary to accept the fact of the plasticity of the genome, as neuroscientists at one time, after many years of failure, finally realized and accepted the presence of neuroplasticity (brain plasticity).

- c. It is necessary to develop various methods of treating cancer, neurodegenerative and other diseases based on gene therapy using viruses (biocommunicators) and aimed not at suppressing the symptoms of the disease, but at eliminating their causes.

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Conflicts of interest

The authors declared there is no conflict of interest.

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