

## Research Article

# New Scientific Theories - The Base for Creating Perspective Methods of Treating Different Diseases

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### Abstract

The paper presents new biological theories (13 viral and one genetic theory), which have made a significant contribution to the development of fundamental science. New therapeutic methods are proposed to create a more effective health and education system. The article discusses the use of gene therapy and autogenous therapy for the prevention and treatment of various neurodegenerative (Alzheimer's disease, Parkinson's disease), mental and oncological diseases in humans. As well as, a new instrumental method shows influence on the physiological state of the body - a viral bioregulator.

**Keywords:** Acquired genome; Autogenous therapy; Genetic theory; Gene therapy; Main genome; Viral bioregulator; Viral theory; Viruses

### Introduction

Cell theory is still one of the most fundamental biological theories on which all modern biology is based [1]. Therefore, a proper understanding of the processes occurring at the cell level, genetic characteristics and understanding of the role of the various components of the cell are of strategic importance for the proper and effective development of science. It is no secret that viruses are one of the greatest mysteries of modern biology [2]. For this reason, new biological theories were developed in Yerevan in 2018-2019 on the basis of scientific meta-analysis [3,4]. To date, there are already 13 viral theories and one genetic theory. In addition, a new classification of the genome on the main and acquired, this became the basis for understanding and acceptance of the plasticity of the genome.

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The main purpose of this scientific article is to propose new therapeutic methods to create a more effective health care system. Here will be presented various modifications of the method of gene therapy for humans and a new instrumental method of influence on the physiological state of the body- a viral bioregulator. It is created for the prevention and treatment of various neurodegenerative, mental and oncological diseases in humans. However, to understand the new therapeutic methods it is necessary to take into account the results of our fundamental research. They became the scientific basis on the basis of which it became possible to develop practical methods for the prevention and treatment of various diseases. Therefore, I ask my readers to be patient and get acquainted with the results of our fundamental research.

Below we present all known viral theories and genetic theory. And only after that we will propose new therapeutic methods to create a more effective health care system and education system [5].

In our previous scientific papers we concluded that viruses are migratory organelles of cells [3,4]. They are actually a part of us-cellular life forms and perform numerous functions. Viruses are not independent forms of life and this is evidenced by cell theory. In addition, according to our biological theories, classical cell theory is scientifically sound.

In 2018-2019, as a result of scientific meta-analysis, the new biological theories presented in table 1 were created, which made a significant contribution to the development of fundamental science.

1	The Viral Theory of The Electromagnetic Reception
2	The Viral Theory of Biocommunication
3	The Viral Theory of Signal Transduction
4	The Viral Theory of Functioning of The Energy System of Cell
5	The Viral Theory of The Functioning of The Immune System
6	The Viral Theory of Perception of Information
7	The Viral Theory of Memory Formation
8	The Viral Theory of The Functioning of The Somatic Nervous System
9	The Viral Theory of The Functioning of The Autonomic Nervous System
10	The Viral Theory of The Functioning of The Endocrine System
11	The Viral Theory of The Functioning of The Cardiovascular System
12	The Viral Theory of The Functioning of The Reproductive System
13	The Viral Theory of Evolution of The Organic World and Homo Sapiens
14	The Nano-Model Theory of Genome Functioning

**Table 1:** Viral and genetic theories.

According to modern ideas, the virus (lat. Virus- poison) is a non-cellular infectious agent that can be reproduced only inside living cells. Viruses infect all types of organisms, from plants and animals to bacteria and archaea [2], [6,7]. Viruses are found in almost every ecosystem on Earth, and are the largest biological form. According to the old conservative beliefs, viruses are obligate parasites, as they are not able to reproduce outside the cell [8].

Given the current level of knowledge in various fields of science, there is an urgent need to revise some fundamental ideas about the true role and place of viruses in nature. For this purpose, a meta-analysis of various reliable scientific data was performed [3].

For the first time the existence of the virus was proved in 1892 by the Russian scientist D. Ivanovsky. After years of research into tobacco plant diseases, in a work dated 1892, D. Ivanovsky concluded that mosaic tobacco disease is caused by “bacteria passing through a bacteriological filter that cannot grow on artificial substrates”.

Five years later, in the study of diseases of cattle, a similar filtering microorganism was isolated. And in 1898, during playback experiments D. Ivanovsky Dutch botanist M. Beyerinck, he called these microorganisms “filterable viruses”. In an abbreviated form, this name began to denote this group of microorganisms.

In 1901, the first human viral disease, yellow fever, was discovered. In 1911, Francis Raus proved the viral nature of cancer-Raus sarcoma. So, we have formulated 13 new viral theories, each of which reveals one of the functions of viruses in nature, and thenano-model theory of genome functioning (Table-1).

Before proceeding to the description of these theories, we give some scientific data confirming the validity of our biological theories.

1. To date, about 5-6 thousand types of viruses have been identified and studied, although it is assumed that there are more than a hundred million. What is the need for such a huge biodiversity of these creatures? The answer to this question will be given in the description of our theories. Here we note only that nature does not create anything in vain.
2. Viruses are distinguished by a special - disjunctive method of reproduction: nucleic acids of viruses and their proteins are synthesized separately in the cell, and then they are assembled into viral particles.
3. The genetic apparatus of viruses is very labile; they can easily mutate and thus change their “behavior”.
4. Viruses are widespread, capable of infecting almost all representatives of flora and fauna, and even many microorganisms. Many viruses have open access to one or many cell types of different cellular life forms.
5. Per milliliter of ocean water accounts for  $5 \times 10^7$  bacteriophages.
6. According to authoritative and reliable data, 1/3 of the human genome consists of so-called “junk genes”. It is also known that this is the space where viruses are embedded.
7. The basic biological information needed to build and maintain an organism is the genome. It is known that human genes contain 100 thousand DNA fragments of endogenous retroviruses, which make up 5-8% of the human genome.
8. Viruses, their derivatives and closely related structures make up at least 43% of the human genome [9].
9. According to the statements of the British researcher Dr. Frank Ryan, according to the latest scientific data, the human genome consists of a total of half of the DNA of viruses. “In fact, man is a product of symbiosis, that is, the peaceful coexistence of man and the virus”, says Frank Ryan. “Without them, there would be no us. Or we would be completely different” [9,10].

10. It is known that even in a healthy body live numerous viruses without causing him much harm.

11. Thanks to the activity of viruses, the process of fertilization and the formation of the placenta in humans is successfully implemented, and in fact we owe our existence as a biological species to the functioning of viruses.

12. Why children under a certain age do almost not developed long-term memory function? The fact is that only by 1-2 years of life a person forms the necessary arsenal of viruses (virus composition) which gives the opportunity to carry out this unique opportunity for a person- to remember, archive information for a long time. Virom is unique for each person and this can explain the individuality of cognitive abilities of each person [7].

So, we concluded that viruses are migrating organelles of eukaryotic cells. They are actually a part of us - cellular life forms and perform numerous functions. Viruses are not independent forms of life and this is evidenced by the classical cell theory.

In 1898, when reproducing the experiments of D. Ivanovsky, the Dutch botanist M. Beyerink actually introduced the term “virus”, as he called such microorganisms “filtering viruses”. In 2018, after 120 years, based on the above, we proposed to replace the term “virus” term “biocommunicator”. This is certainly more in line with their functions.

## Viral Theories

**The viral theory of the electromagnetic reception:** Viruses functioning in the cells of living beings can act as electro-magnetoreceptors of electro-magnetic radiation (including ultraviolet spectrum). They are universal and very convenient intermediaries for converting one type of signal into another- the conversion of electromagnetic radiation into a sequence of nucleotides in their DNA or RNA molecules. As a result of the influence of electromagnetic radiation on viruses, they can easily be transformed and at the same time can easily be integrated into the genome of various cells, subordinating biochemical processes, and later physiological and behavioral characteristics of the whole organism. As a result of the influence of ultraviolet and other radiation spectra on the DNA and RNA of biocommunicators, they change their primary structure and/or spatial-structural organization (form), which actually contributes to the processes associated with the plasticity of the genome and therefore affect neuroplasticity. For details, see the nano-model theory of genome functioning presented below. Biocommunicators are crucial in the synthesis of various biologically active substances of natural origin (e.g., vitamins) in different organisms. After all, it is known that the biosynthesis of vitamins in plants or in the biosynthesis of vitamin D in the human skin has a major role ultraviolet radiation spectrum.

It is known that ultraviolet radiation reaching from the Sun to the biological systems of our planet is relatively safe and cause only genetic changes in the surface cells or viruses of the body. Further, these viruses (biocommunicators) migrate to the inside of the body, for example, in the Central nervous system causing there ultimately changes the biochemical and physiological processes. If necessary, the body’s immune system can destroy these viruses. This mechanism provides a safe and gentle regulation of the behavior of all living systems of biocenosis from the Sun and Outer space, thus integrating all biological systems of the planet Earth into the Universe.

**The viral theory of Biocommunication:** In biocenosis, the process of biocommunication, that is, the interaction between individuals of different species, in addition to the known channels of interaction is also due to the presence and functioning of numerous viruses (biocommunicators) of organisms and freely existing viruses that can easily transform and penetrate into the cells of another organism.

For the implementation of biocommunication in society a person is able to actively use viruses (biocommunicators) whose carrier it is. With the help of a virus, that can easily change its genetic apparatus of a person positively or negatively (depending on your thoughts) affects the surrounding people and other organisms of biocenosis transmitting these biocommunication them, all known transmission routes of viruses in nature. A similar process takes place between all organisms, all known in nature biological species. From prokaryotic life forms (e.g. bacteria) the role of biocommunicators plays plasmid. Plasmids are also known to science as mobile genetic elements.

The combination of all viruses, plasmids and other mobile genetic elements of the body is the material basis of his aura, as the totality of all Viroms, freely available mobile genetic elements and single-celled organisms in nature make up the General aura of our planet.

**The viral theory of signal transduction:** In the human body, animals, plants, fungi and microbial colonies a certain stage of signal transduction, that is, the signal transmission and the process by which one type of signal or stimulus is converted into another is also due to the presence and functioning of viruses (biocommunicators).

In multicellular organisms, viruses (biocommunicators) in addition to the nervous and endocrine systems provide the coordinated functioning of all its parts. Thanks to all this, a multicellular organism or a colony of bacteria is integrated into a single whole.

Viral theory of signal transduction can become the basis for understanding the mechanisms of formation of many human diseases and, consequently, for the development of new methods of their treatment. However, this will no longer be a symptomatic treatment, eliminating mainly the consequences of the disease, and the therapy will be aimed at eliminating the main causes of the formation of the disease. This viral theory will certainly shed light on the understanding of the mechanisms of formation of cancer, neurodegenerative and many other diseases [11,12].

**The viral theory of functioning of the energy system of cell:** According to one theory of the origin of mitochondria and plastids as cell organelles, they originated from free living prokaryotic cells. At a certain stage of the evolution of the organic world of mitochondria and plastids entered into symbiosis with eukaryotic cells, performing in them the most important functions associated with the energy system of the cell. Mitochondria synthesize ATP as a result of aerobic splitting of organic compounds, and plastids (chloroplasts) carry out the process of photosynthesis.

According to other scientific data, bacterial (prokaryotic) cells often have specific viruses- bacteriophages. They regulate the activity of bacteria. Mitochondria and plastids are no exception. Based on the above scientific data, we can formulate another viral theory, which is associated with the functioning of the energy system of the cell.

Eukaryotic cells regulate the activities of its organelles (mitochondria and plastids) with the help of their other organelles- biocommunicators (viruses). This is one of the clearest examples of the signal

transduction function of viruses. Thus, the energy system of the cell (mitochondria and plastids) is fully integrated into the organism.

The second most important example of the regulation of energy processes in the cell is the process of photosynthesis in cyanobacteria. As is known, thanks to the activity of viruses, an ordinary bacterium becomes a full-fledged cyanobacterium capable of carrying out the process of photosynthesis.

Based on the above, we can conclude that viruses are actively involved in the energy processes of prokaryotic and eukaryotic cells. The viral theory of the functioning of the energy system of the cell is really the basis for understanding the mechanisms of formation of many diseases in humans, including cancer and neurodegenerative [12].

**The viral theory of the functioning of the immune system:** Viruses of humans, animals, plants and other organisms play a role in the functioning of the immune system. It is known that humans and animals have intestinal microflora, skin and other organs, consisting of a huge number of microorganisms in the cells of which bacteriophages function. They are the migrating organelles of cells of a multicellular organism and normally should regulate the number and behavior of these microorganisms. And the microflora itself plays the role of “defender” of the body from pathogenic microbes. Thus, viruses are one of the most important components of the body’s immune system. In addition, it is known that fragments of the genetic material of viruses fixed in human DNA, eventually turned into key elements of the immune system. Similar processes occur in other species.

**The viral theory of perception of information:** Viruses of humans, animals and other organisms play a leading role in the process of information perception. The information we receive from the senses (receptors) is transmitted to the Central nervous system, where it is presented in the form of electrical impulses. And the process of electrical activity in the Central nervous system leads to the formation of a certain sequence of nucleotides of DNA/RNA-containing viruses (biocommunicators), and also changes their configuration (3D) and motor activity (4D). An important role in this process is played by microtubules of cells that form the same antenna on the cell surface. Microtubules are transport infrastructure for DNA - and RNA-containing biocommunicators (viruses). Thus, in neurons and, consequently, in the brain, biological nano-models of various objects “noticed” by receptors of the organism are created. In humans, there is also the opportunity for creative thinking. Each thought can correspond to one particular “virus”, and the emotion is already a whole group of “viruses”. Often the brain can penetrate even a “virus” or a group from outside (the thought or emotion of another organism) and thus to carry out biocommunicator. This can confirm the well-known fact that viruses are able to control the consciousness of different species of animals and humans. This in turn creates the prerequisites for the formation of long-term memory. Because the perceptual process usually begins with a receptor, it is important to note that the functional activity of individual receptor also depends on the activities of biocommunicators.

**The viral theory of memory formation:** A process of continuous electrical activity in the Central nervous system in the course of reverberation leads to the formation of structural changes of DNA/RNA-containing viruses (biocommunicators) virom’s of humans and animals. All these changes in neural responses is called the

consolidation, and viruses (biocommunicators) are the material carriers of information in long term memory. In fact, there is the formation and further storage of biological nano-models. Further, the expression of these genes leads to the extraction of information from long-term memory. In the human body, the function of a carrier of information in short-term and long-term memory is performed by herpesviruses.

Herpesviruses [13] (lat. Herpesviridae) - a large family of DNA-containing viruses, which infected the majority of the population of our planet [14].

As of May 2016, the International Committee on Taxonomy of Viruses (ICTV) has registered 86 species of viruses on the website of International Committee on Taxonomy of Viruses (ICTV)]. A distinctive feature of this family of viruses is the presence of the virus in the cells latent, persistent, infinitely long time, without clinical manifestations. Therefore, according to our theories, at this time they perform the most important functions of the higher nervous activity of the organism described by us.

In fact, memory is not localized in certain parts of the brain, and distributed throughout the body. The key role and place of storage of memory of course plays the body's brain. Brain structure responsible for memory formation in DNA (and perhaps RNA) biocommunicators and implementation processes the information contained in these molecular memory.

**The viral theory of the functioning of the somatic nervous system:** Viruses of the human body and animals play a leading role in the process of transforming the will and intentions of the body into movements. All the acquired skills of the body during life are postponed in the form of changes in the structural and spatial organization of the genetic material of biocommunicators in the long-term memory of humans or animals and further, if necessary, the expression of these genes. It is thanks to the above molecular mechanisms that the body has the opportunity to carry out motor and speech activity and actually subordinate the functioning of the somatic nervous system to its will. In fact, this can explain the formation of linguistic abilities in humans. And thus, the genes responsible for it must be sought in the acquired genome (genes biocommunication). For more information, see our nano-model theory of genome functioning presented below.

**The viral theory of the functioning of the autonomic nervous system:** Viruses of the human body and animals also play a leading role in the functioning of the Autonomous nervous system. Many innate and acquired skills of the body during life are presented in the form of changes in the structural and spatial organization of the genetic material of biocommunicators in the genetic/long-term memory of the body and in the future, if necessary, the expression of these genes. Thus, the autonomic (vegetative) functions of the nervous system of humans and animals, which are vital for the body, are provided. It is thanks to the above molecular mechanisms that the body has the opportunity to better adapt to changing environmental conditions. However, it should be borne in mind that the genes of the main genome also carry a significant burden in ensuring the functioning of the Autonomous nervous system.

**The viral theory of the functioning of the Endocrine system:** The endocrine system of the body along with the nervous system is one of the most important regulatory systems. The integration of parts of the body into a single whole and the regulation of life is provided largely

on the basis of the conditions of existence of the system (organism), and is implemented through the production and functional activity of hormones. Biologically active compounds (hormones) are actually copies of the gene biocommunicators endocrine system and in fact implementing biological information encoded in the corresponding gene (according to the principle of nano-prototyping a theory of the functioning of the genome). All this is possible only thanks to the most important genetic features of the genome of the organism - its plasticity (see details below). Changes in the conditions of existence affect changes in the structural and spatial configuration of DNA/RNA viruses and this is due to the regulatory basis of the functioning of the hypophysis (the main gland of internal secretion of humans and some animals). And then the hypophysis regulates the activity of other organs of the endocrine system and, consequently, the entire body. This principle/mechanism also works for the functioning of the nervous, immune, cardiovascular and other systems of the organism.

**The viral theory of the functioning of the cardiovascular system:**

The cardiovascular system of the body is a vital and integrative system, so given the importance of the autonomy of the heart. Regardless of the activity of the neuro-endocrine-immune system biocommunicators (viruses) of the heart can have a significant impact on the activity of the heart muscle, thereby affecting the body as a whole. According to our theory, the heart of the body is no less important in making important decisions for the body than the brain. In fact, biocommunication heart is able to provide short - and long-term memory of the body. For many of the features of the emotional sphere of the human body is responsible to the heart is with the so-called cardio biocommunication.

**The viral theory of the functioning of the reproductive system:** To date, it has been fully proved that thanks to the activities of viruses (biocommunicators), the process of fertilization and the formation of the placenta in humans is successfully implemented. It turns out that we owe our existence as a species to the functioning of these Creatures. In addition, viruses take an active part in the communication process, which is a key factor for the functioning of the reproductive system in humans and animals (as well as other species). This applies, for example, sexual attraction between individuals of different sexes and all subsequent stages (insemination and fertilization) to ensure the process of reproduction.

**The viral theory of evolution of the organic world and Homo sapiens:** It is thanks to viruses from prokaryotic cells formed eukaryotic cell. At this stage of evolution, viruses (biocommunicators) perform the function of mobile genetic elements, play a major role in the horizontal transfer of genes in nature and thus are the main component of the acquired genome. Under the influence of the external and internal environment of DNA/RNA biocommunicators easily mutate or at least change the spatial-structural organization and, therefore, carry out the role of the driving force of the evolutionary process of the organic world. Thus, thanks to its ability to plasticity of the genome, the organism can perfectly adapt to changing living conditions. Thanks to the activity of biocommunicators in the process of evolution of the organic world, a new biological species has appeared - Homo sapiens. Viruses (biocommunicators) became the basis for the formation of higher human nervous activity. If the biocommunicator makes changes (is inserted) into the main genome of the stem germ cell, it becomes an endovirus and is passed on from generation to generation.

## Modern classification of genome and new genetic theory

**The main and acquired genome:** Genome- a set of hereditary material contained in the cell of the body. The genome contains the biological information needed to build and maintain the body. Most genomes, including the human genome and the genomes of all other cellular life forms, are built from DNA. There is also another definition of the term “genome”, in which the genome is understood as a set of genetic material haploid set of chromosomes of this species [15,16].

According to the classical data in humans (*Homo sapiens*) hereditary somatic cell material is represented by 23 pairs of chromosomes (22 pairs of autosomes and a pair of sex chromosomes), located in the nucleus, and the cell has many copies of mitochondrial DNA. 22 autosomes, sex chromosomes X and Y, human mitochondrial DNA contain together approximately 3.1 billion base pairs.

In many species, only a small fraction of the total genome sequence encodes proteins [17]. Thus, only about 1.5 % of the human genome consists of protein-coding exons (DNA sites, copies of which are Mature RNA). The reasons for the presence of such a large number of non-coding DNA in eukaryotic genomes and the huge difference in sizes of the genomes (P-value) is one of the unsolved scientific mysteries; the research in this area also point to a large number of relict fragments of virus in this part of the DNA.

Reading the sequence of letters in the human genome does not yet give an understanding of how the genome works. This is not a decoding of the genome, but, on the contrary, an encrypted text, the meaning of which we do not yet understand. According to modern classical ideas the main intrigue is that all cells of the body have the same DNA, which contains information about the coding of certain proteins. But different tissue cells are different, muscle cells are not like nerve cells or blood cells. In the process of development, each organism goes from a fertilized egg to an adult and changes all the time, but the genome does not. Obviously, the work of genes varies in different places and at different times. The way it is regulated is the “basic mystery of life”.

Below is our scientific position, according to which fully explains “the main the puzzle life”. This was made possible by understanding such a basic biological process as the formation and functioning of the acquired genome in the process of ontogenesis. In other words, in nature, there’s the plasticity of the genome [4]. Let’s begin.

The main genome is a set of all genes obtained by the body from the egg and sperm as a result of fertilization (nuclear, mitochondrial, plastid). It’s vertical gene transfer.

Acquired genome is the set of all genes produced by the body during embryonic and post-embryonic periods by migratory organelles cells (biocommunicators) in the form of molecules of DNA and RNA. It is important to note that the acquired genome can also be formed on the basis of existing genes (biocommunicators) under the influence of, for example, electrical processes occurring in the nervous system of the body (see viral theories of information perception, memory formation and functioning of the nervous system) [3] which take place as a result of the activity of sensory systems of the body. The formation of the acquired genome is also influenced by electromagnetic radiation (for example, ultraviolet radiation spectrum) of natural and artificial origin. In fact, it turns out that all changes

occurring in the external and internal environment of the body are fixed (cause changes) in the acquired genome. Those that are important-are stored in the reserves of long-term memory of the body. This is horizontal gene transfer [4]. The acquired genome is individual for each somatic cell. If the process takes place in the gametes that can be formed endoviruses genes that are already known to be inherited from generation to generation.

The role of biocommunicators single-celled prokaryotic organisms (e.g. bacteria) plays plasmid. However, they are not able to perform all the functions inherent biocommunication. Below we draw your attention to the fact that plasmids carry out active horizontal gene transfer in prokaryotes. Analogues of plasmids for the eukaryotic viruses are. Bacteriophages (bacteria viruses) are not biocommunicators (migrating organelles) of bacterial cells and this is indicated by the fact that they forcibly introduce their genetic material into the bacterial cell. Thus, bacteriophages are biocommunication of various eukaryotic cells (they are migratory organelles) to implement and enforce the regulation of various biochemical processes in bacterial cells, and their numbers (on the part of the owner of this biocommunicators).

**Plasmids and their role in horizontal gene transfer in bacteria:** Plasmid- a small DNA molecule that is physically separate from the chromosomes of the genome and is able to replicate autonomously. As a rule, plasmids are found in bacteria and are double-stranded ring molecules, but occasionally plasmids are also found in archaea and eukaryotes [16,18].

In nature, plasmids usually contain genes that increase the resistance of bacteria to adverse external factors (including resistance to antibiotics), often they can be transmitted from one bacterium to another (sometimes even to another species of bacteria) and thus serve as a means of horizontal gene transfer. Getting plasmids in the cell can be carried out in two ways: either by direct contact of the host cell with another cell in the process of conjugation, or by transformation, that is, artificial introduction of plasmids into the cell, which is preceded by a change in the expression of a certain gene of the host cell (the acquisition of competence of the cell).

In fact, plasmids serve as biocommunicators in prokaryotes. The fact that plasmids are involved in active horizontal gene transfer in prokaryotic organisms indicates that a similar process should certainly take place in eukaryotic life forms. It is known that prokaryotes from the evolutionary point of view are older and more primitive than eukaryotes, therefore, in the process of evolution (the emergence of eukaryotes from prokaryotes) to lose the ability to horizontal gene transfer from the eukaryotes would be simply unforgivable. Yes, it is unforgivable by Nature. New eukaryotic forms of life simply could not survive the struggle for existence and would be eliminated by natural selection. After all, no competent specialist- scientist in this field has any doubt that the exchange of genes (determining signs and properties) in the process of ontogenesis of the organism gives him only advantages. Thus the cell (organism) becomes more adapted to new and constantly changing conditions of the environment. Remember only the ability of bacteria to become resistant to antibiotics through horizontal gene transfer, which certainly makes them “stronger” and less vulnerable. In other words, plasmids (biocommunicators of prokaryotic cells) bacteria provide enormous benefits. In addition, as you know, eukaryotic organisms still survive and even thrive. Moreover, multicellular eukaryotic life forms at this stage of

the evolution of the organic world are the leaders of Biocenosis. For this reason declare with all responsibility that the role of plasmids from eukaryotic organisms certainly perform viruses (biocommunicators), which actually have a more complex structure compared to plasmids and therefore perform more functions (see viral theory; it is 13 known to date functions biocommunicators from eukaryotic forms of life).

According to the above information about the acquired and core genome, it is possible to give a new definition to the term “phenotype”. Phenotype is a manifestation of a set of genes obtained by vertical and horizontal channels of gene transfer and the result of their interaction. Therefore, the phenotype is the expression (manifestation) of the genotype. Naturally, the contribution is made by combinative and mutational variability.

The body throughout life - from the moment of fertilization of the egg (the formation of the zygote) to death has the ability to enrich its genotype by increasing the proportion of the acquired genome. This is done by horizontal gene transfer. Information received by sensory systems (receptors) of the body about the external and internal environment actively affects the change (enrichment or impoverishment) of the acquired genome of the organism, as a result, the phenotype changes. However, these changes affect only the genes of certain cells of certain tissues of the body. For example, cells of the Central nervous system (CNS) of humans or animals, immune system or liver cells change. If the changes affect the germ cells, the new features and properties will be inherited from generation to generation. Thus, there is a genetic modification of various organisms (including humans).

According to the additional position of the cell theory, the cells of multicellular organisms (e.g., zygote) totipotently, that is, have genetic potentials of all cells of the organism, are equivalent in genetic information, but differ from each other by different expression (work) of different genes, which leads to morphological and functional diversity- to differentiation.

The opinion of the author of this scientific article is radically different from the above additional position of the cell theory. Bearing in mind that there is an acquired genome (except the main one)- cells in the process of ontogenesis of the organism already become not equivalent in genetic information and therefore differ from each other not only by different expression of different genes, but also by different gene set of the acquired genome. This is essential for morphological and functional diversity (differentiation) of cells. It is a necessary condition for the appearance of highly specialized cells of multicellular organisms (in humans, for example, in the process of perinatal and postnatal periods of ontogenesis). This feature is not taken into account by many bio-engineers in obtaining tissues and organs in vitro for their further use for medical purposes (transplantation of tissues and organs) and therefore can not get fully functioning and suitable for transplantation to the recipient many types of human tissues and organs. To date, more than one scientist in the world could not get the human brain in vitro, and never will, if you do not take into account the presence of the acquired genome of the cell, because in the complex functioning organs (e.g., brain) plays a key role is horizontal gene transfer.

Thus, taking into account our classification of the genome at the basic and acquired levels, it is possible to achieve a full understanding of the various biological processes occurring at the genetic, cellular

(biochemistry) and organizational (physiology) levels of the organization, in normal and in various pathologies. Not to mention the great prospects for bio-engineers [4].

**Brain plasticity and the plasticity of the genome:** According to the above genome of the body - it is actively and dynamically developing system throughout the period of ontogenesis. To make this thesis more convincing see the analogy with the plasticity of human brain in our scientific article published in 2018 [7].

Scientists with a little delay, but still came to the conclusion about the existence of neuroplasticity [19-21] in nature. Why not accept the fact about the plasticity of the genome (the processes of occurrence/destruction of genes in the process of ontogenesis of the body) and with the help of this understanding of the fundamental biological processes to explain the many processes occurring in nature and are “mysteries” of science. I suggest that geneticists do not make “mistakes” neuroscientists and timely review and determine the question of the plasticity of the genome of the body, which will certainly have a huge impact on the development of biological Sciences and numerous practical areas of knowledge.

**The Nano-model theory of genome functioning:** According to our nano-model theory of genome functioning, the DNA molecule stores biological information not only in the form of a genetic code consisting of a sequence of nucleotides, but also in the form of a spatial-structural organization. This means that the information component lies not only in the primary structure of the organization of DNA molecules, but also in the II and III structures. It is actually a kind of biological nano-models [3,4]. Similar functions in nature and can carry out RNA molecules, as well as to some extent, and protein molecules.

DNA contains information about the structure of different types of RNA and proteins [1]. But this does not mean that the DNA molecule is not able to independently carry out numerous biological functions that ensure the functioning of living systems.

Almost all genes function on the principle of nano-layouts. However, based on the fact that many genes of the main genome are localized in the cell nucleus, and must function in the cytoplasm or outside the cell, so nature has created known modern biology transcription and translation processes. The protein has a volumetric structure (a certain form) due to its II, III, sometimes even IV structure. It is known, for example, that the protein enzyme has an active center, functioning on the principle of the key to the lock. It will have a certain functional activity depending on its shape. DNA molecule (its specific site- gene) also has II, and III structure, that is, it is not just a linear molecule consisting of nucleotides [1,22].

Our nano-model theory of genome functioning perfectly reflects the numerous processes taking place both at the cellular and at the organism levels. Genes, functioning on the principle of nano-layouts are actually a kind of copy of the macrocosm. Depending on the adequacy of the reflection of the macrocosm at the cellular level, we can judge the level of quality of perception of information from the body. The well-known expression: “The Brain is in the World, and the World is in the Brain”, becomes fully understandable thanks to the above scientific data.

**Differentiation of cells in multicellular organisms: formation of higher nervous activity in humans:** If we take into account that the organism (cell) has the main and acquired genome, this fact sheds

light on many, currently unresolved scientific issues and, first of all, on aspects of the genetic level of development of the organism. In turn, it becomes clear how and by what molecular mechanisms the differentiation of cells in multicellular organisms in the process of individual development (ontogenesis) is carried out. Scientifically fully justified, for example, the emergence of highly specialized functions in the neurons of the human brain and the manifestation already at the organizational level of various functions of higher nervous activity, many of which even at the present stage of human development are considered “secrets” of science.

Therefore, it is not surprising that geneticists who study the human genome are struggling to find those genetic features that caused the increase in the brain and, perhaps, it's more effective work. Special hopes are placed on the comparison of the human genome with the chimpanzee genome. This allows us to immediately exclude from consideration those 98% of the genome that are identical in our species. Somewhere out there, in the remaining two percent, the mystery of human uniqueness is encrypted. It remains to understand where and how.

Immediately after reading the genome of chimpanzee, genetics friendly ranks rushed to storm the “eternal mystery” of human uniqueness. Publications devoted to the identification of unique genetic features of Homo sapiens appear more often, and it seems that a little more-and something very important will open to us. And in fact, today we have proposed biological theories are able to explain all this scientifically. Behavior and mental abilities of the person are at qualitatively new level in comparison with monkeys. It is reasonable to assume that these differences are genetic in nature.

As a result of serious studies, scientists have proved that the origin of man was not observed universal and large-scale accumulation of amino acid changes in genes involved in the nervous tissue [23,24]. But we are still smarter than chimpanzees and the relative size of the brain we have more! “Apparently, the development of our mental abilities is encoded by a very small number of genes (changing their sequence or level of expression), and these changes do not affect the average characteristics of all genes of the nervous system” [23,24]. These researchers came to similar conclusions. And according to the proposed classification of the genome on the main and acquired (based on our viral theories) and nano-model theory of genome functioning, all this can be explained very logically and scientifically justified. The fact is that modern classical genetics study only the main genome of the body, that is, genes derived from the parent germ cells (egg and sperm). However, for the functioning of highly specialized cells (such as, for example, brain neurons) - those genes that were obtained from parents by vertical transmission (from germ cells as a result of the formation of a zygote) will not be enough. According to our viral theories, for the full perception of information, the formation of memory and the functioning of the somatic nervous system, the body in the process of ontogenesis must additionally obtain a certain set of genes by horizontal gene transfer. This normally occurs in the perinatal and postnatal periods of individual development of the body. In order for most of the highly specialized cells in the human body (or other multicellular organism) began to fully perform their intended functions- it is not enough to “turn on” (expression) certain groups of genes and “turn off” other groups of genes of the main genome. If it were that simple, geneticists would have found a lot of genes from the main human genome, which are inherent only to us (humans) and

distinguish us, for example, from monkeys. The fact that man in terms of its development is quite superior to other species of animals, in my opinion there is no doubt. And these differences are due to the receipt of additional genes already in the process of human ontogenesis. The basic human genome only creates the prerequisites (favorable conditions) for the implementation of this important process and only a small number of genes are necessary for this. By the way, according to modern genetic studies, this is what distinguishes us, for example, from chimpanzees on the main genome.

**The formation of the immune system as evidence of plasticity of the genome:** It is known that during the formation of the acquired immunity cells of the immune system can acquire new genes not peculiar to the main human genome. This happens depending on the influence of the environment on the body- on what viruses and foreign agents the body will be infected during ontogenesis. After all, all sensible scientists understand that at the time of fertilization, it is still unknown in what conditions the individual development of the organism will take place. We inherit only part of the immune system, and therefore the immune system of humans and many species is a dynamically changing system. And this is another confirmation of the failure of the concept of totipotence of cells of a multicellular organism and indicates the validity of the concept of genome plasticity [3,4].

### Gene therapy and viral bioregulator

Based on the above biological theories we can conclude that with the help of viruses (biocommunicators) is it possible to specifically manipulate the genome of an organism. This becomes quite real due to the plasticity of the genome. Therefore, we offer various modifications of gene therapy for the treatment of neurodegenerative (Alzheimer's disease, Parkinson's disease and others), mental and oncological diseases. We also offer a new instrumental method of influence on the physiological state of the body - a viral bioregulator.

**Classical gene therapy:** Because viruses (biocommunicators)- mobile genetic elements of eukaryotic cells, they can be used to transfer the necessary characteristics and properties from one organism to another. We propose to use this opportunity in the treatment of various neurodegenerative, mental and oncological diseases. Our previous scientific article describes in detail the formation of cancer and neurodegenerative diseases [12]. These diseases are formed due to the destruction or reduction of activity of corresponding biocommunication. This leads to a violation of the signal transduction and the functioning of the energy system of the cell. As a result, with the unauthorized growth of cells formed Oncology, and with the mass death of nerve cells - neurodegeneration. If you restore the composition of biocommunication sick person with the help of the introduction of biological material from a healthy person (donor) to the patient, remove the cause of the formation of the disease. This will lead to the recovery of the patient. It is also possible to conduct symptomatic treatment in parallel. In addition, the method of gene therapy can be combined with phytotherapy and surgical treatment. The donor of the biological material must meet all the requirements demanded of the donors. As a donor biomaterial, we suggest using human saliva for the treatment of cancer, and cerebrospinal fluid for the treatment of neurodegenerative diseases. The patient takes, biocommunicatorsof donor- oral, and cerebrospinal fluid can be administered into the spinal canal of the patient. There is still no data of experimental studies and clinical trials on this issue. Therefore, talking about the recommended doses is not

possible. It is necessary to determine optimal and suitable donor of biological material (containing biocommunication) for the treatment of a disease. Side effects and contraindications according to assumptions based on theoretical data - almost no.

**Autogenous therapy:** The difference between the method of classical gene therapy and autogenous therapy is only that the donor of biomaterial is the patient himself. However, it needs to pass the biological material (saliva, CSF or other), even when healthy. Further, it is necessary to preserve this biomaterial with the help of cryopreservation and if this person has health problems in the future, he can be treated with the help of gene therapy. The advantages of the method of autogenic therapy are that there will be no problem of biocompatibility of the donor and of the recipient, as the person himself is the donor of biocommunicators. The method of autogenous therapy is useful for people at risk of neurodegenerative, mental, cancer and other diseases. In addition, the method can be an excellent prevention of many diseases and become the basis of modern preventive medicine. The disadvantages of the method are the problem of preservation of biomaterial for a long time. In addition, a person may have congenital health problems, which will be a ban on his donor activities.

We propose to use the method of autogenous therapy for people with dangerous for health professions. For example, employees of nuclear power plants and chemical plants, astronauts or other professionals who put their health at risk and knowingly know that they will enter the risk group of any disease. Before people in these professions go to the performance of their professional duties, need to take a biomaterial with their biocommunication and to preserve for a long time (for example cryogenically). Further, if this person has health problems, he will be able to receive treatment using the method of autogenous therapy (using his biomaterial). It is necessary to periodically (every month or every year 2-4 times) monitor the health of representatives of the above professions. And if a person is healthy at the moment-it is necessary to take a new portion of biomaterial. Thus, each person can have a Bank of their own biomaterials, which in the future will be the basis for the development of individual medicine. Individual medicine is a promising scientific and practical direction that creates medicines individually for each patient.

**Viral bioregulator:** According to our nano-a model of the theory of operation of genome functional activity of the genome and the organism as a whole depends on the spatio-structural organization of genes in DNA- and RNA containing biocommunication and DNA, RNA, proteins core genome. Therefore, the formation of a “pathological” gene occurs during the formation of a disease. Its expression leads to disruption of biochemical processes in cells and physiological processes in the body. This leads to the appearance of a symptom of the disease and illness. The essence of the viral bioregulator is the destruction of these “pathological” genes of the main and acquired genome with the help of artificially created electro-magnetic radiation or acoustic effects on the human body. It is important to consider the following: electro-magnetic radiation or acoustic exposure should not be detrimental to the patient’s body. The impact must be expressed in the time expression data “pathological” genes. For example, you can use a viral bioregulator in mentally ill people. When a mentally ill person has memories of a previously received psychological trauma, it is necessary to bring a viral bioregulator into action. In other words, with the help of electro-magnetic radiation or acoustic effects on the human body used to destroy and deactivate the corresponding genes.

The method can, and sometimes even necessary, be used in combination with classical gene therapy and autogenous therapy. The name “Viral bioregulator” is due to the fact that many diseases are caused by a violation of the genes of biocommunicators (viruses), that is, the acquired genome. However, it is necessary to understand that the cause of the disease can also be due to a violation of the genes of the main genome. In this case we should not call “Viral bioregulator”, and “Gene bioregulator”.

## Conclusion

In conclusion, I thank all my readers for their patience and interest in progressive science. In fact, the development of the biological Sciences (new viral theory, the classification of the genome, for the adoption plastinate genome and genetic theory) allowed developing new practical methods for the development of the health system and the education system. In this scientific work, we have focused on health issues. On the modernization of the education system do not dwell on the reason that on this topic recently published a scientific article. Note only that it is necessary to adopt and apply a three-stage system of education, which consists of neurobiological, motivational and information stages. If necessary, at the first- neurobiological stage it is necessary to use classical gene therapy. Very useful can be autogenous therapy at certain stages of human life. The modern system of education is based on neuroplasticity (plasticity of the brain), and the basis for this is the plasticity of the genome. Viral bioregulator will be useful for purposeful management of the processes of formation of the genome of the body. Thus, I propose to actively apply in practice the practical methods proposed in this article for the development of the health and education system. Thereby improving quality of life of millions of people around the world.

## References

1. Alberts B, Johnson A, Lewis J, Johnson A, Raff M, et al. (2002) Molecular biology of the cell. (4<sup>th</sup> edn). New York: Garvard Science, USA.
2. Cann AJ (2011) Principles of molecular virology. (5<sup>th</sup> edn). Pg no: 320.
3. Sargsyan VR (2018) The main and acquired genome. Nano-model theory of genome functioning. “International Science Project”. Pg no: 8-13.
4. Sargsyan VR (2019) Neurobiological basis of psychological problems of personality development in the education system. Solloquium-journal. Warszawa, Poland. Pg no: 7-9.
5. Taylor D, Green N (2006) Stout U. Biology. Moscow, Russia.
6. Nicholas H, Acheson (2011) Fundamentals of molecular virology. (2<sup>nd</sup> edn). Wiley, New Jersey, United States.
7. Sargsyan VR (2018) Formation of Human Nervous Activity and New Biological Theories. J Brain Neurosci 2: 004.
8. Roberts (2018) DNA tumour viruses: Virology, pathogenesis and vaccines. Pg no: 264.
9. Ryan F (2013) Viroolution.
10. Ryan F (2016) The Mysterius World of the Human Genom.
11. Shi P, Bakewell M, Zhang J (2006) Did brain-specific genes evolve faster in humans than in chimpanzees? Trends Genet 22: 608-613.
12. Sargsyan VR (2019) Mechanisms of formation of oncological and neurodegenerative diseases on the basis of viral theory of signal transduction. Med Crave. Advances in Obesity Weight Management and Control 9: 8-10.



13. Gosmanov RG, Galiullin AK, Volkov AKh, Ibragimova AI (2011) Microbiology: study guide - SPb. Lan publishing house 496.
14. Arvin A, Campadelli-Fiume G, Mocarski E, Moore PS, Roizman B, et al (2007) Human Herpesviruses: Biology, Therapy, and Immunoprophylaxis. Cambridge University Press.
15. Inge-Vechtomov SG (2010) Genetics with the basics of selection- SPb. Publisher NL, 718.
16. Mainell G (1976) Bacterial Plasmids=Bacterialplasmids. MacMillan, London. 240.
17. Atlas of Medical Microbiology, Virology and Immunology: A manual for students of medical universities (2003). In: Vorobeva AA, Bykova AS (eds.). Medical Information Agency, Russia.109.
18. Zhimulev IF (2002) General and Molecular Genetics. Novosibirsk University Press, Novosibirsk. 459.
19. Sargsyan VR (2018) The true place and role of viruses in nature. Viruses - migrating cell organelles. International Science Project 4-8.
20. Rao SS, Huntley MH, Durand NC, Stamenova EK, Bochkov ID, et al. (2014) 3D map of the human genome at kilobase resolution reveals principles of chromatin looping. Cell 159:1665-1680.
21. Norman D (2010) Brain plasticity: Stunning facts about how thoughts are capable of changing the structure and function of our brain. 544.
22. Klug W, Cummings M, Spencer Ch, Palladino M (2015) Essentials of Genetics. (9<sup>th</sup> edn), 608.
23. Khaitovich P, Hellmann I, Enard W, Nowick K, Leinweber M, et al. (2005) Parallel patterns of evolution in the genomes and transcriptomes of humans and chimpanzees. Science 309: 1850-1854.
24. SquireL, Berg D, Bloom F, Du Lac S, Chosh A, et al. (2008) Fundamental Neuroscience. (3<sup>rd</sup> edn), USA.



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