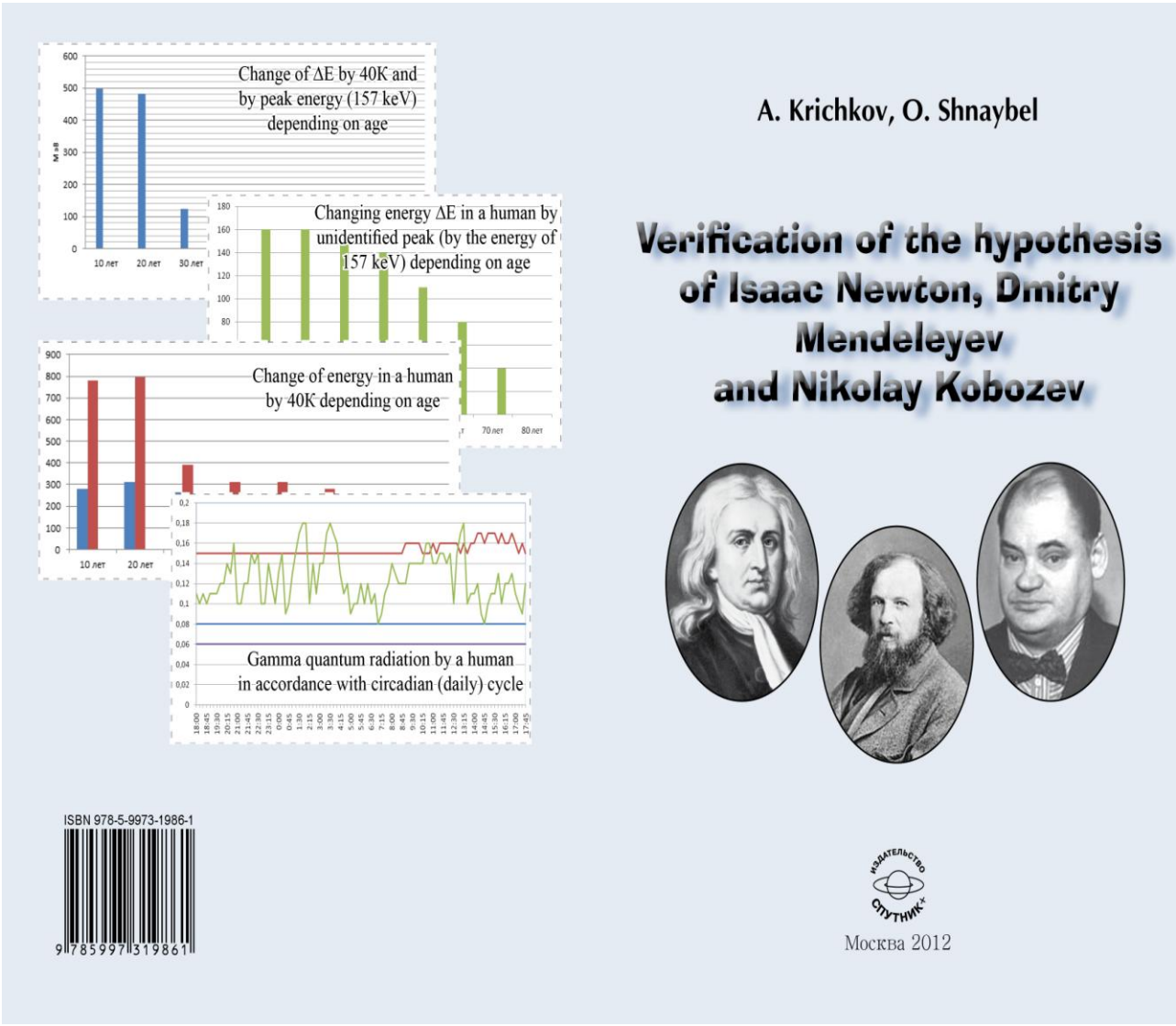

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Krichkov A. Shnaybel O.

Verification of the hypothesis of Isaac Newton, Dmitry Mendeleyev and Nikolay Kobozev.

The research was conducted in the facilities of the following organizations:

1. Russian Federation State Health Care Institution "Center of Hygiene and Epidemiology" (Russia).
2. Institute of Cytology of the Russian Academy of Sciences (Russia).
3. Institute of Physiology of the National Academy of Sciences of Belarus (Belarus).
4. Scientific and production centre Medical Center of Revitalization and Rejuvenation "La Lik" LLC (Russia).
5. National Research Nuclear University (MEPhI), (Russia).
6. Federal State Institution Federal Medical and Biological Center named after A.I. Burnazyan (former State Scientific Center, Institute of Biophysics), (Russia).
7. The test results were subject to substantive examination in the spectrometry section and received expert appraisal from Federal State Unitary Enterprise Russian Scientific Centre "Kurchatov Institute", (Russia).

Biophysical research in the medical physics sector was performed in order to investigate the action mechanism of the substance "Star Dust" (SSH&H) effect on human physiology. The substance is classified as a photon preparation and it has no analogues.

Additional objective of the research was verification of the hypothesis of Newton, Mendeleyev, Kobozev about existence of particles with mass less than that of an electron and about effect the particles have on human physiology.

The hypotheses were formulated as follows.

Newton I. [1]: "To proceed to the hypothesis: first, it is to be supposed therein, that there is an ethereal medium much of the same constitution with air, but far rarer, subtler, and more strongly elastic" [2].

“At least, the elastic effluvia seem to instruct us, that there is something of an aethereal nature condensed in bodies” [3].

“First then, I suppose, there is such a spirit; it means that the animal spirits are neither like the liquor, vapour, or gas of spirit of wine; but of an aethereal nature, subtil enough to pervade the animal juices, as freely as the electric, or perhaps magnetic, effluvia go through glass…

And to know, how the coats of the brain, nerves, and muscles, may become a convenient vessel to hold so subtil a spirit, you should know how liquors and spirits are disposed to pervade or not pervade things on other accounts than their subtilty. … So some fluids, as oil and water, though their parts are in freedom enough to mix with one another and by some secret princinple of unsociableness they keep asunder; … The ike unsociableness may be in aethereal natures.

And on this ground, if the aethereal vital spirit in a man is very sociable to the marrow and juices, and unsorciable to the coats of the brain, nerves, and muscles, or any things lodged in the pores of those we suppose no great violence done to it to squeeze it out; and that it may not be altogether so subtil as the main body of aether, though subtil enough to pervade readily the animal juices, and that, as any of it is spent, it is continually supplied by new spirit from the heart” [4].

Mendeleyev D.I. [5]: “But at the present time, when there can be no doubt that the hydrogen group is preceded by the zero group composed of elements of less atomic weights, it seems to me impossible to deny the existence of elements lighter than hydrogen. The problem of the ether is more or less closely connected with that of gravity, and gains in simplicity when all question of the chemical attraction of the atoms of ether is excluded, and this is accomplished by placing it in the zero group. But if the series of elements begins with series I containing hydrogen, the zero group has no place for an element lighter than *y*, like ether. I therefore add a zero series, besides a zero group, to the periodic system, and place the element *x* in this zero series.

I would like to preliminary name it “Newtonium” - in honour of immortal Newton” [6].

Kobozev N.I. [7]: “In the overall entropy of nature, there is the only non-entropic, quite ordered phenomenon, - a logical product of the brain and conscience

… The brain is capable of non-entropic thinking only being supplied with "negative entropy".

Therefore, negative entropy emerged as an additional parameter necessary for ordered thinking, rather than a Deus ex Machina. Without this new factor the ordinary atomic-molecular substance of the brain is unable to ensure the process of thinking, and even the elementary information process, if it is related to the most elementary symbolic representation …..

We should assume that particles, or a system of particles with negative entropy is unknown …

On the other hand, since entropic statistical mechanisms exist on the information level, the question about nature of the particles could be rather reasonable raise herewith…» [8].

Further, Kobozev provides theoretical calculations and comes to the conclusion that "all the atomic particles, including the lightest H particle, possess positive geometrical entropy; all the ultralight particles lie in the range of negative geometrical entropy and can serve as the source for the same" [9].

"Hence, staying within the Mendeleyev periodic system, it is impossible to satisfy the condition required for creation of the low-entropy conditions of the brain and conscience in the real environment of the brain functioning, that is at the temperature slightly above room temperature" [10].

"Thus, a "cloud" of x, the gas penetrating the neuron net, will consist of ultralight particles with the mass of (10^{-7} m_e - 10^{-3} m_e) at the concentration of (10^{14} - 10^{17} x – particles/cm^3), which is correspondent to the density of ~ (10^{-19} - 10^{-14}) g/cm^3…..So far, it has been, obviously, impossible to identify x-particles with any known elementary particles, for such particles have not been observed yet… As compared to atomic substance, such particles would be represented by areas of almost total "material vacuum" [11].

"The calculations with ultralight particles noted here provide a promising source… In the end, this line leads to the possibility to consider "vacuum" as an essential component of conscience and life" [12].

"Probably, such particles will probably not coincide in their properties with those above mentioned; however, some of their primary properties (low weight and density, large space and time advancing) must necessarily be pertinent to them" [13].

Summarizing the hypotheses of the three scientists, we can draw the conclusion as follows: Newton suggested that there is an "ethereal live gas" in human body, which is generated by heart. Mendeleyev, in his final periodic table, made provision for a zero group of elements where an element lighter that hydrogen is positioned, and proposed to name the element "Newtonium – in honour of immortal Newton". Kobozev performed theoretical calculation of the physical parameters of particles of "x-gas", which must be present in a human body to reduce entropy.

This hypothesis of the three scientists is consistent with contemporary idea of the quantum physics. If the terms ether and vacuum hereinafter mean particles with the mass less than that of an electron, there seem to be no contradictions.

"Vacuum can be understood as an "absolute nothing", a specific state of all the particles, when they have energy so small that they can not be perceived immediately by naked eye, and even by any most accurate instruments. Vacuum fluctuations (zero oscillations) represent a vacuum form of energy (internal energy of a quantum field). It has been deduced from experiments that under certain conditions virtual particles can transform into real particles" [14]. Ginzburg V.L. [15].

"The ether of the general theory of relativity is a medium deprived in itself of any mechanical and kinematic properties, which is nevertheless determinative for mechanic and electromagnetic events" [16]. Einstein.

- 1 -

Motivational reason for establishing of the foregoing hypotheses.

Within the scope of professional activities, in the period from 1999 to 2008, the technology and specification were developed, test modes elaborated and limited batches of the product named "Star Dust" (SSH&H) were manufactured. From November 2008 production of limited batches has been arranged, the production volume being restricted to 180 grams per month.

Research was performed in the facilities of the Laboratory of Federal State Institution "Center of Hygiene and Epidemiology". Evidences were obtained that

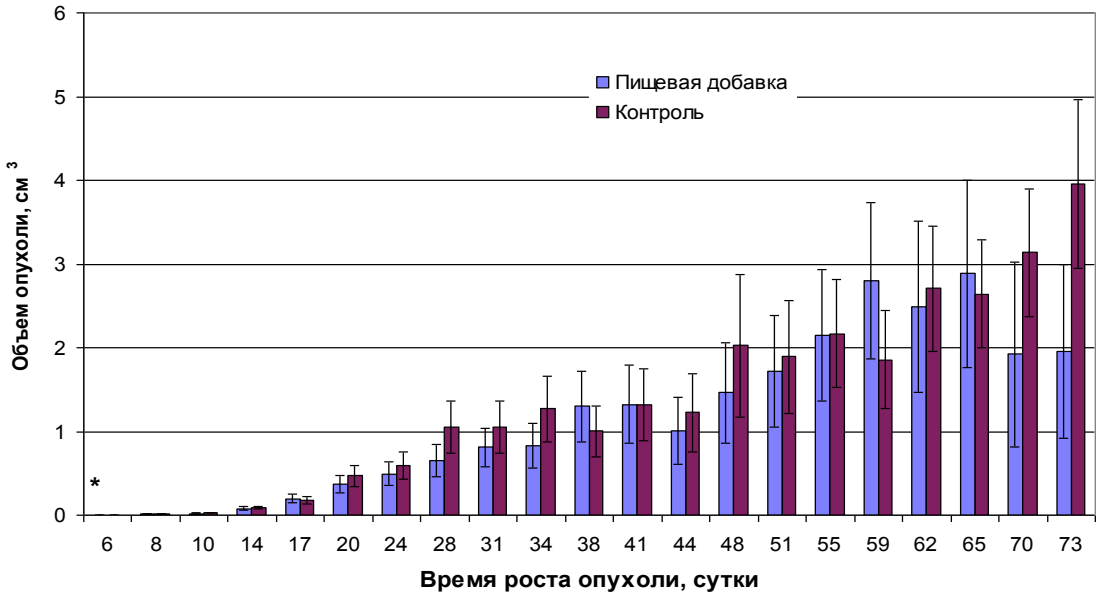
“Star Dust” (SSH&H) is compliant with hygienic safety requirements. It is free from toxins, supplements of synthetic drugs and GMO components. It is also free from any substances which have narcotic and narcotic and psychotropic effect, including any strong performance enhancing substances. “Star Dust” (SSH&H) is an absolutely natural product.

Preparation “Star Dust” (SSH&H) underwent state registration and was recorded in the state register. Additionally, research was performed at National Research Nuclear University (MEPhI), and radiation quality certificate was obtained, which proves compliance with radiation safety requirements.

In addition cytological research was conducted. According to the report of Institute of Cytology of the Russian Federation Academy of Sciences: “Substance “Star Dust” (SSH&H) in the concentration of 0.1-50 μg/ml has no in vitro effect on the viability, proliferation limit, morphology, chromosome aberration frequency and telomere length in human cells”. The above suggests inert nature of the substance for a human body, which means safety, also in case of long-term administration. Preclinical statistics allowed for the conclusion that there are no side effects, including those deferred in time.

As to the report of Institute of Physiology of the National Academy of Sciences of Belarus. Positive trend was observed in the experiment that studied effect of “Star Dust” (SSH&H) on the growth of Ehrlich ascetic carcinoma (EAC) in mice, namely, a slowdown of the malignant neoplastic process (in the experimental group) to 59%. On top of that, an additional experiment was conducted with single administration dose of “Star Dust” (SSH&H) increased tenfold. There was no toxicological effect. That was another evidence that the substance is inert in nature for a cell culture and that it is free from toxic properties.

Figure No. 1. Effect of “Star Dust” (SSH&H) on EAC growth, mean values changing in series; by comparison of series 1 and 2.

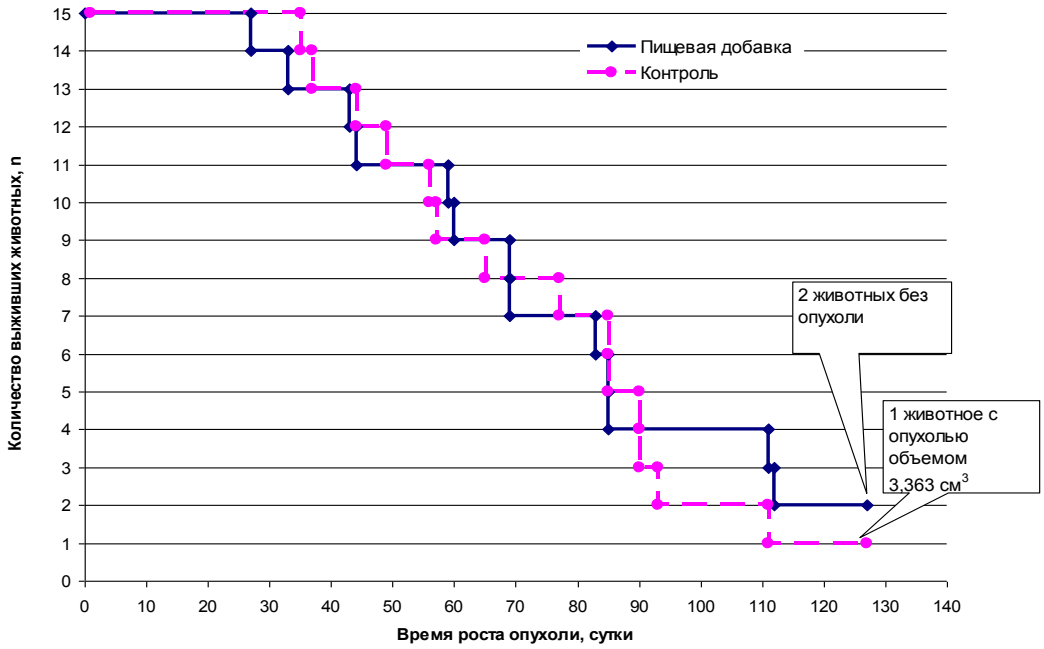


Пищевая добавка	Food supplement
Контроль	Control
Объем опухоли, см^3	Carcinoma volume, cm^3
Время роста опухоли, сутки	Time of tumor growth, days

Blue color is food supplement
Violet color is control
Vertical axis is carcinoma volume (cm^3)
Horizontal axis is time of tumor growth (days)

"By the 127th day of growth 73.8% of animals in the set of experiments died due to the carcinoma progressing 27 – 112 days from EAC vaccination; two of the fifteen mice had no carcinoma (one of them did not develop carcinoma after the vaccination, the other demonstrated regression of a small tumoral node). In control set, carcinoma developed by that time in 100% of animals, 14 animals died from advanced carcinoma after 35 - 111 days, one surviving animal had carcinoma 3.363 cm^3 in volume, Fig. No. 2.

Figure No. 2. Effect of "Star Dust" (SSH&H) on life time and survival rate of EAC carriers.



Пищевая добавка	Food supplement
Контроль	Control
Количество выживших животных, n	Number of survivors, n
Время роста опухоли, сутки	Time of tumor growth, days
2 животных без опухоли	2 animals without carcinoma
1 животное с опухолью объемом 3,363 см^3	1 animal with carcinoma with the volume of 3.363 cm^3

Blue color is food supplement

Pink color is control

Vertical axis is number of survivors, n

Horizontal axis is time of tumor growth (days)

Upper note: 2 animals without carcinoma

Lower note: 1 animal with carcinoma with the volume of 3.363 cm^3

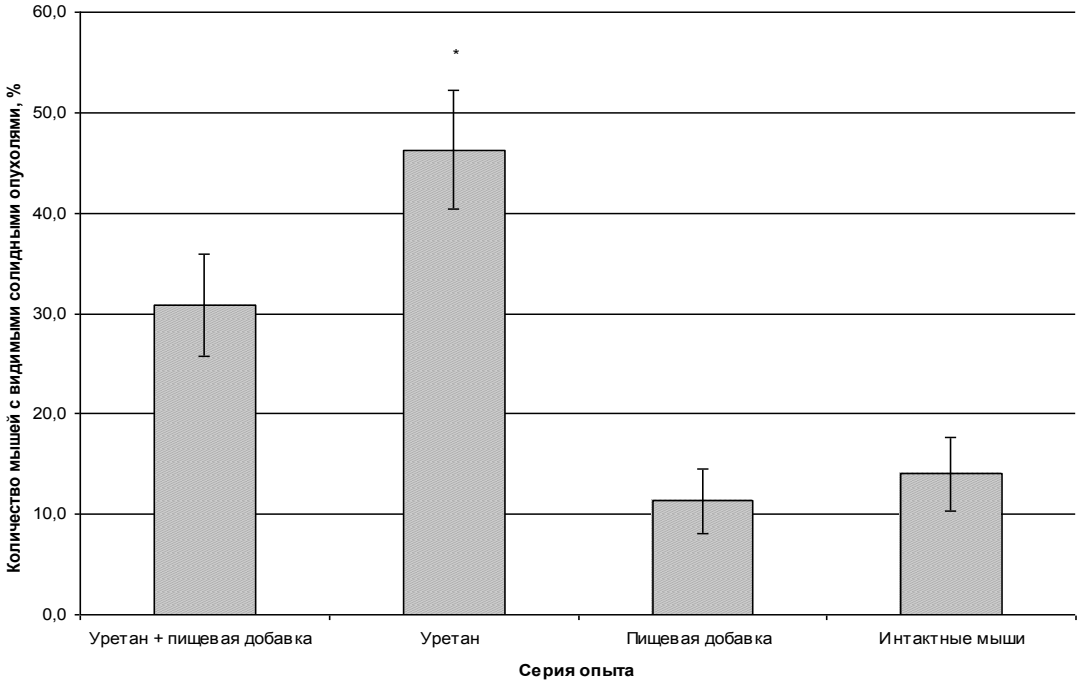
The following dynamics was observed in the group with Erlich ascetic carcinoma where “Star Dust” (SSH&H) was administered:

- 73.8% - a slowdown of the neoplastic process from 39% to 59 %;
- 13% - carcinoma resorption;
- 6.6% - carcinoma vaccination failure;
- 6.6% - radical slowdown of the neoplastic process.

The promising factor is that, in accordance with international standards, a substance inducing a slowdown of the neoplastic process at the level of 24% is considered to be high-performance. It follows from the studies performed, that the neoplastic process is slowed down by 39% to 59%, without any toxicology.

Another study was performed aiming at the investigation of substance “Star Dust” (SSH&H) effect on the emergence of spontaneous and urethane-induced visible solid tumors in mice. Mice of Af line, females in the age of 5 to 5.5 month, were used for the experiment in the number of 200 animals. The mice of the Af line used in the experiment are distinguished by high frequency rate of mammary tumors and lung tumors. Mice in the experimental group were injected with urethane, subcutaneously, dosed as 1.5 mg/g; the injection date was considered to be the first day of the experiment.

The final result was as follows.
Figure No. 3. A set of experiments with urethane.



Количество мышей с видимыми солидными опухолями, %	Number of mice with visible solid tumors, %
Уретан + пищевая добавка	Urethane + food supplement
Уретан	Urethane
Пищевая добавка	Food supplement
Интактные мыши	Intact mice
Серия опыта	Set of experiment

Vertical axis is number of mice with visible solid tumors (%)

From left to right on the horizontal axis: Urethane + food supplement, Urethane, Food supplement, Intact mice, Set of experiment

The obtained data allow for the following conclusion: Administration of “Star Dust” (SSH&H) facilitated reduction in the formation of urethane-induced visible solid tumors in Af line mice. On the 76th to 172nd day from the beginning of “Star Dust” (SSH&H) administration by animals, the frequency rate of tumor formation at various stages of the observation was reduced 1.2 to 2.2 times as compared to the control group of animals who were injected with urethane but did not receive “Star Dust” (SSH&H) [17].

The studies provided statistically valid proofs of the resistive action towards carcinogenic factors.

In case of administration by humans, the dynamics was still more positive.

A human who started taking the powder visually remained in the same age when he/she started administration, for 16 to 20 months. Along with the visual effect, there was another one: quality of life increased, and secondary age-related diseases disappeared or were caused into deep remission.

On the top of that, average body temperature was reduced by 0.1 to 0.2 degrees Celsius. This is a significant factor influencing human life span. We know from physiology, that reduction of body temperature by 0.1 degree Celsius enables human to live 14 years longer due to a slowdown of metabolic processes alone.

Leveling of hormone shifts was observed. In 9 months there was a stop in somatotropin and testosterone depletion, and further, we observed the positive growth in the hormones in 70% of cases. Vision improved considerably, especially when we mean age-related longsightedness.

Results of the preclinical studies with substance “Star Dust” (SSH&H) administered within the short period of time of 90 days.

“The group of volunteers consisted of 29 people, including 18 women in the age of 26 to 53, and 11 men in the age of 31 to 67.

All the volunteers were almost healthy people, without pathologies.

Observations over the changes in hormone concentrations were made by somatotropin, testosterone (in males) and prolactin.

The observations showed the following dynamics of the mean reference values within the 90 days of “Star Dust” (SSH&H) administration:

Prolactin – reduction: 722 – 613 – 563 -511 (mU/l);
Testosterone – increase: 4.44 – 4.39 – 4.47 – 4.57 (nmol/l);
Somatotropin – increase: 4.27 – 4.36 – 4.48 – 4.58 (mU/l);
Body temperature – decrease: 36.62 – 36.46 – 36.4 – 36.38 (C);

The percentage dynamics was:

Prolactin – reduction by 211 units (29%);
Testosterone – increase by 0.13 units (2.9%);
Somatotropin – increase by 0.31 units (7.2%);
Body temperature – decrease by 0.24 degrees (0.6%)" [18].

The result of the research conducted in the facilities of Scientific Research Institution of Oncology named after N.N. Petrov, Ministry of Public Health and Social Development of the Russian Federation, in the carcinogenesis and oncoherontology division, was as follows.

"The objective of this work was to investigate the effect of preparation SSH&H on the biomarkers of homeostasis and ageing, longevity and development of mammary adenocarcinomas in female transgenic mice carrying the mammary cancer gene HER-2/neu. The transgenic and knockout mice models characterized with shortened or extended life span provide a unique opportunity to evaluate the role of genes engaged in the process of ageing, and in the mechanisms of age-related pathology development, including cancer. The transgenic mice carrying gene HER-2/neu, which is attributed to the family of tyrosine-kinase receptors of the epidermal growth factor receptor (EGFR), are distinguished by high frequency rate of mammary tumors and short life span.

67 female mice of FVB/N line carrying oncogene HER-2/neu were used in the experiment. Mice of the line were initially obtained from the National Institute of Ageing (Ancona, Italy). Experiment data were subject to statistical processing by analysis of variance methods using statistical packaged programs STATGRAPH, STATISTICA (5.5) and STADIA. Reliability of the difference was evaluated by Student t, χ^2, Wilcoxon-Mann-Whitney criteria and by Fisher accurate method as well as by the P-value recommended by IARC (International Agency for Research on Cancer)" [19].

Table No. 1.

"Body temperature dynamics in female HER-2/neu mice exposed to SSH&H.

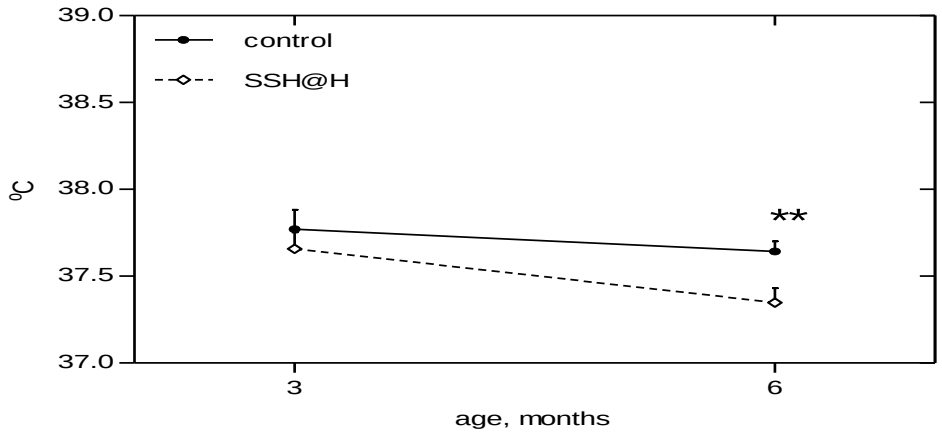
Age, months	Control	SSH&H
3	37.8 ± 0.11 N=7	37.7 ± 0.09 N=7

6	37.6 ± 0.06 N=33	37.4 ± 0.08 N=34 **

The difference from control is statistically valid: **- $p<0.01$

Figure No. 4.

Body temperature dynamics in female HER-2/neu mice exposed to SSH&H.



Maximum life span of the mice in control group was 333 days (11 moths), while in the experimental group was 381 days (12.5 months). Administration of preparation SSH&H with fodder increased survivability of the mice who reached the age of 10 months, as compared to the control group mice. Therewith, maximum life span was increased by 1.6 months, and average life span rose by 8.7% in 10% long-living mice, as compared to relevant values in the control group mice.

Figure No 5.

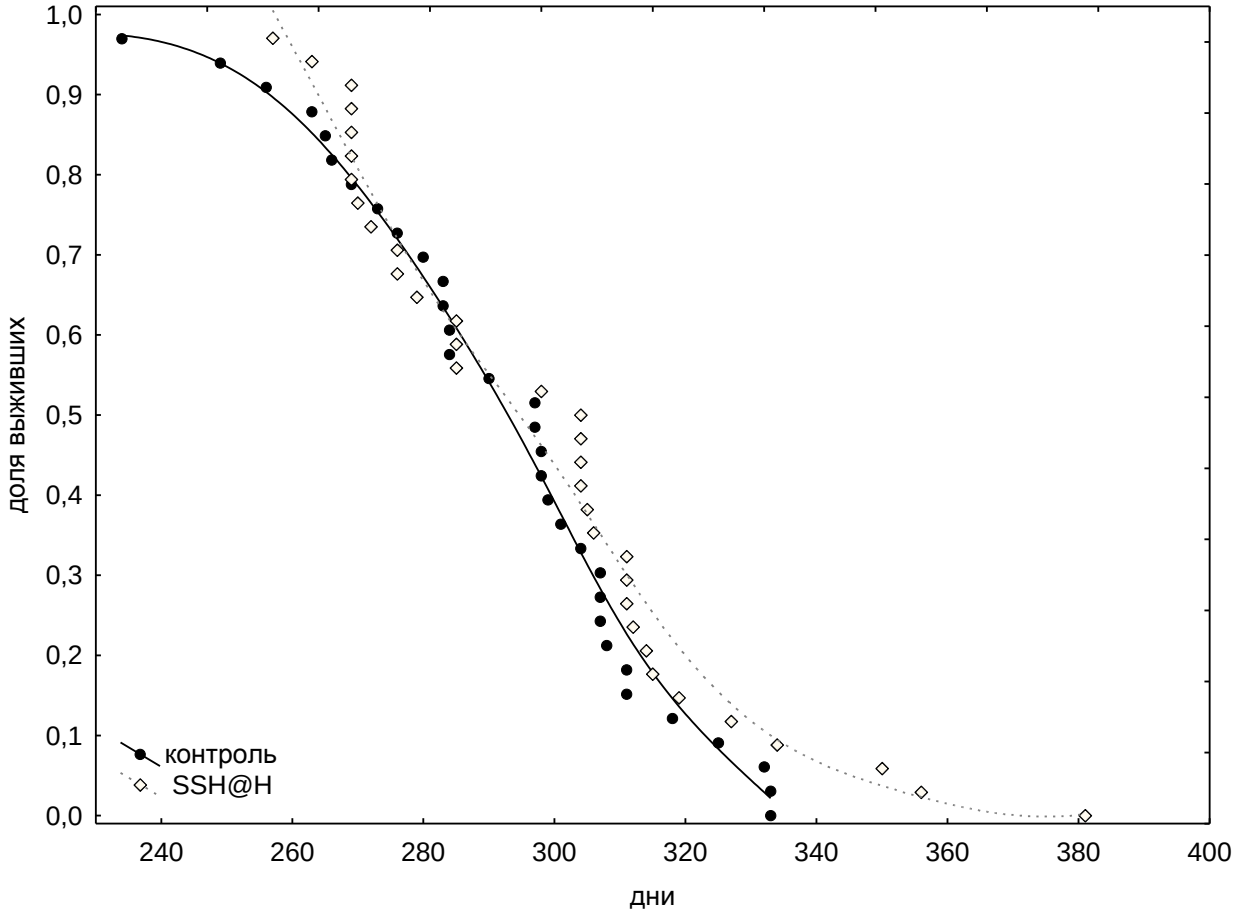
Survival rate dynamics in female HER-2/neu mice exposed to SSH&H" [20].

Доля выживших	Survivors share
Контроль	Control
Дни	Days

Vertical axis is survivors share

Horizontal axis is days

symbolizes control



The outcome of the entire spectrum of the conducted research was beyond the predictable result. Since the subject substance was free of active component, the substance was inert towards body cells. On the other hand: up to 59% slowdown in the malignant neoplastic process, and 13% complete resorption of malignant tumors. An explicit effect of combating the carcinogenic factors, a slowdown in the tumor development dynamics, a reduction of metastasis frequency, an express

heroprotection effect, and a decrease of average body temperature. Extension of maximum and average life span, revitalization of the blood hormonal profile in the form of increase of somatotropin and testosterone concentration (in males) and reduction of lactogenic hormone.

Therewith, statistically-valid proofs were obtained that preparation “Star Dust” (SSH&H) has no toxic properties and that it is carcinogenicity and radiation safe.

The promising research data, repeatable statistics and condition of the patients proved safety, reliability and efficiency of the preparation. However, the substantial investigation of the matter did not reflect the action mechanism, it just stated the facts. Upon the analysis, the decision was made to refuse from further studies on the chemical-biological model and to proceed to investigations on the physical-biological model.

- 2 –

When studying the action mechanism of the substance, “we supposed that in the course of the production cycle some additional element emerges in the composition of “Star Dust” (SSH&H), which element manifests its effect only upon entering a body and coming into interaction with the internal medium. We did not have any methods for fixation and detection of the element, and we named it “Incognitium”” [21].

In the conducted research and observations, a human was considered as an integral and balanced system interacting with the surrounding world. The option of a classical experiment in ideal laboratory conditions was waived intentionally. Human exposures to external effects were minimized, but still considered, calibrated and taken into account for data processing.

The data was processed in accordance with classical laws of physics and chemistry, with the essential addition that reactions generating small amounts of energy and human body temperature mode were taken into account. The additional consideration is important, because Einstein wrote in his theory of relativity in 1907: “Nevertheless, until we have at our disposal a picture of the world that would satisfy the said requirements, we will naturally, without a fear of falling into a mistake, make use of the existing theory for all the issues not related to the transformation of

elementary small amounts of energy, and those not concerning the correlations which include entropy" [22].

When considering a human as a physical object interacting with the environment, we have to handle technical terms, some or other way, however, the practice and statistics of the observations show that this way of research is safe for a human and efficient.

Frolkis V.V. [23] on this issue: "Biologists have long avoided applying technical principles to the explanation of activities of live systems, for fear of being blamed in primitivizm….The technical sphere has the notion of reliability, there is a theory of reliability. Reliability is understood as faultlessness, durability of a system, ability to maintain stable operations for a certain period of time. These criteria are important in both theoretical and practical terms – for the evaluation of a live system status, describing its changes in time, and for the evaluation of adaptation in the process of ageing… Ageing finally results in reduction of reliability of an organism, it's certain systems and cells, and this is the basic reason for restriction of adaptive abilities, development of pathology. …A reduction in reliability of any system is represented by failure to maintain optimal functional level in the long range, moreover, bad damage can be caused by long-term loads" [24].

In the course of investigation of the action mechanism of "Star dust" (SSH&H), an increase in human body activity in the gamma quanta spectrum upon (oral) administration of substance "Star Dust" (SSH&H) was recorded, statistically-valid, as controlled by radiometric monitoring. The presence of radiation quality certificate for compliance with radiation safety norms, and the fact that maximum radiometric control values remained within the safe range, eliminated any causes of trouble. Instead, the ways for further research were open.

A working hypothesis was proposed, that a human can him/herself be a source of the electromagnetic wave. Further, under controlled conditions and with calibrated measurement parameters, a set of experiments was performed, with the results reflected in the work "Supraphysiological mechanism of ageing". The obtained result was as follows: "A human is a source of the electromagnetic wave in the gamma radiation spectrum. The radiation power threshold and the time of maximum value of the radiation are immediately related to the circadian (daily) cycle and season of the year. Therefore, they are related to the Earth motion in orbit around the Sun" [25].

Figure No. 6 [26].

Gamma quantum radiation by a human in accordance with circadian (daily) cycle.

Horizontal axis - time.

Vertical axis - radiation level (μSv/h).

Blue line - room background values.

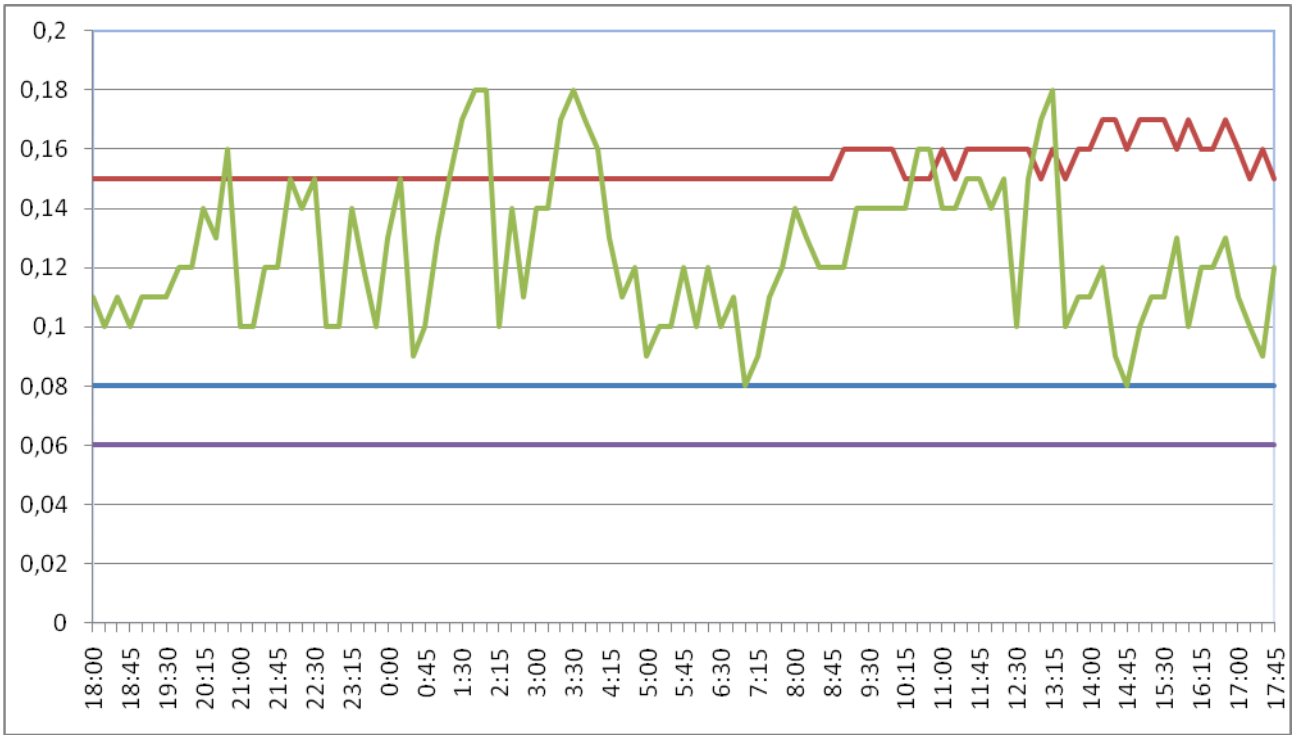
Red line - locality background values.

Green line - human radiation threshold data.

Violet line - radiation by ^{40}K and ^{14}C.

The Earth magnetic field is steady.

Solar activity is low.



Since the change in human activity in the gamma quanta spectrum observed in the natural circadian (daily) cycle coincided, in power and event per second rate, with the values that were recorded upon oral administration of the substance by human, a set of experiments was performed additionally.

Studies were conducted in the human radiation spectrometry (HRS) laboratory in the facilities of Federal State Institution Federal Medical and Biophysical Center named after A.I. Burnazyan (former State Research Center - Institute of Biophysics).

The objective was set as follows: to perform statistically-valid measurement of the human photon radiation changes, and to make theoretical calculations of the radiated particles.

Human specific activity in the gamma radiation spectrum in the chamber (Human Radiation Spectrometry), measurement time 600 seconds, was assumed a control value. In the experiment, substance “Star Dust” (SSH&H) was orally administered to a human, measurement time was 600 seconds.

Solid-state gamma-emission detectors of Canberra Industries, Inc (USA) GC10021 No b08108 were used, fitted with pulse analyzer DSA-1000 No 00000699 and software Genie-2000 (V3.2.1), certified under ISO-9001.

The Human Radiation Spectrometry chambers used in the experiment enable to obtain an instrument spectrum of human gamma radiation, excluding ambient background.

Figure No. 7. Exterior of the Human Radiation Spectrometry (HRS) chamber.

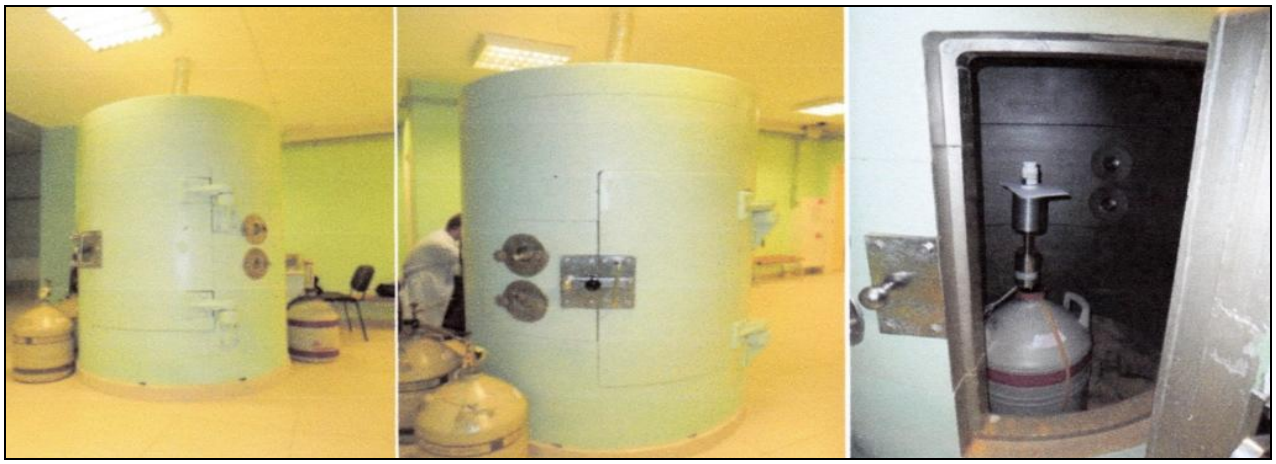
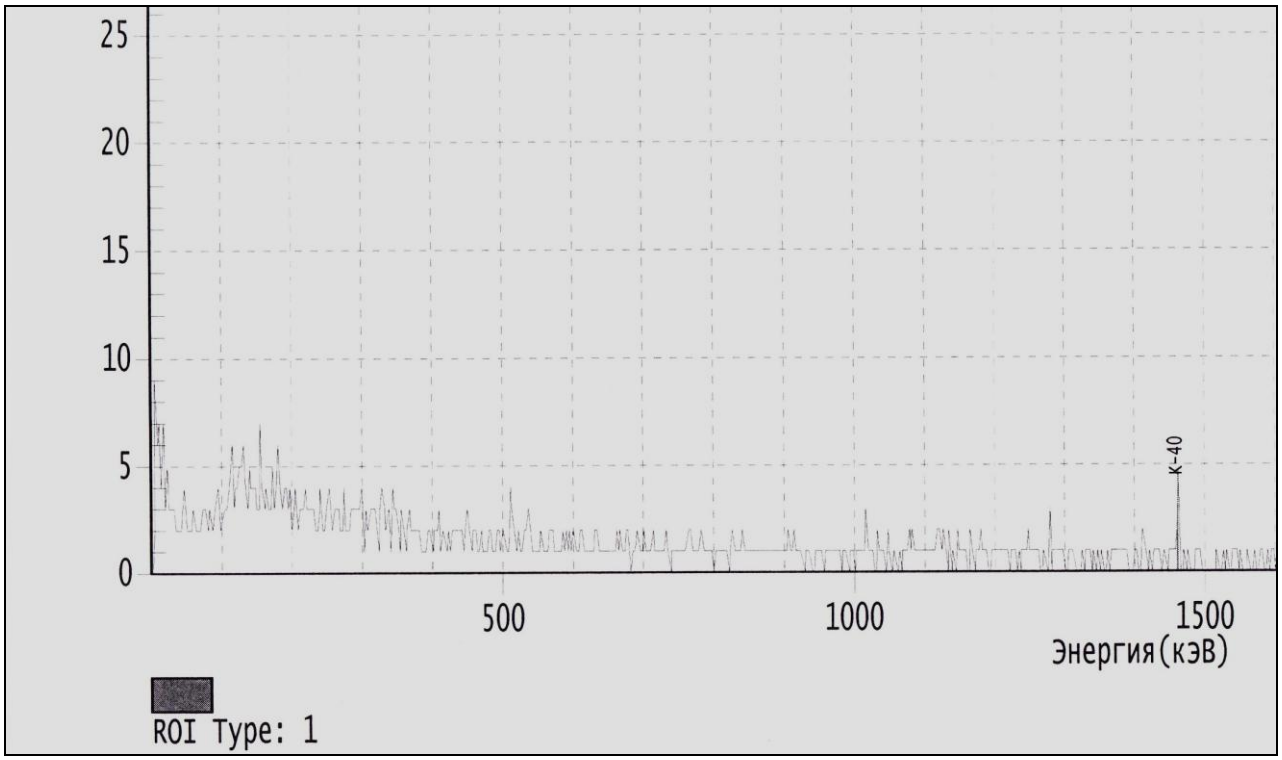


Figure No. 8.

Spectrograms of human specific activity changes.

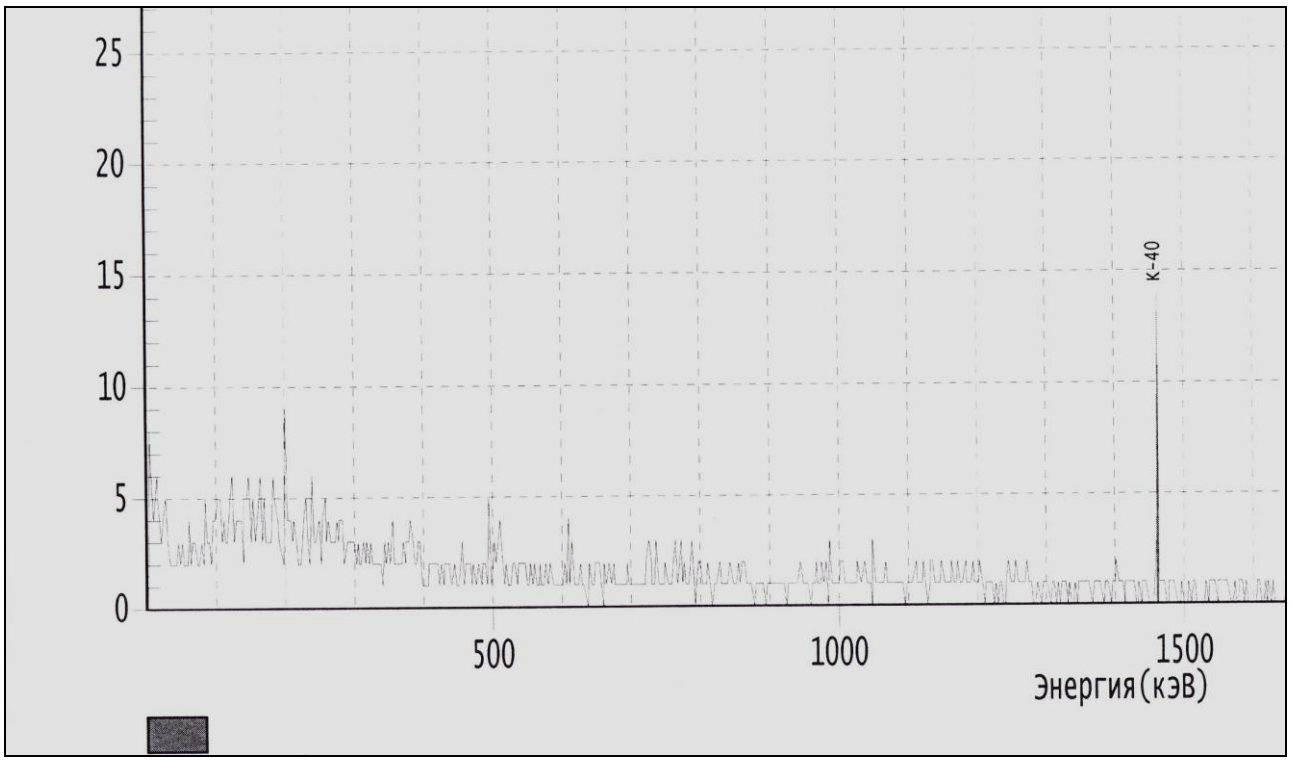
Control, time was 600 seconds.



Энергия (кэВ)	Energy (keV)

Figure No. 9.Spectrograms of human specific activity changes.

Experiment, time was 600 seconds.



Энергия (кэВ)	Energy (keV)

Horizontal axis is energy (keV)

1. By the energy of 1460 keV, there was an increase from 1.727×10^3 Bq to 6.031×10^3 Bq, from 1.840×10^3 Bq to 5.067×10^3 Bq. Concurrently, there was an increase in net peak area.

The change of net peak area by 1460 keV.

Before	After	Error
31	51.3	± 6.91
35	96.3	± 6.97

Mean change of energy was: $\Delta E = 3.765 \times 10^3$ Bq.

2. By the energy of 157 keV, there was an increase from 0.00 keV to 157.49 keV. The peak was not identified. Concurrently, there was an increase in net peak area.

The change of net peak area by 157.49 keV.

Before	After	Error
0	10	± 6.09

Mean change of energy was $\Delta E = 157.49$ keV.

The incorporated equipment allowed for the peak energy measurement to the accuracy of ± 0.23 keV.

In order to exclude any possible radionuclides by photon energy:

“By E = 157 keV, which are: $^{56}_{28}Ni$; $^{85}_{36}Kr$; $^{139}_{56}Ba$; $^{199}_{79}Au$.

By E = 1460 keV, which are: $^{40}_{19}K$; $^{65}_{28}Ni$» [27], additional analysis by method of spectrometry was carried out, that did not prove presence of radionuclides by the above proton energies.

In order to completely exclude the possibility of acquiring divisible properties by the subject substance under the influence of external exerted forces, the following experiments were carried out. Rotation clockwise and counter clockwise, at the rotation speed 5 to 2700 revolutions per minute. Heating in an electric furnace, heating in an open flame, placing of the substance into the electric field, using the substance as a core in the electric circuit, vibration impact. No statistically-valid results of the energy changing in the gamma quanta spectrum were recorded.

The recordable photon radiation of substance “Star Dust” SSH&H upon exposure of the substance to various external impacts was excluded completely.

By the energy of 157 keV, in accordance with the theory of relativity, where the correlation exists between mass and energy reflected by Einstein formula $E = mc^2$, the calculation was made of the physical parameters of particles radiated by human.

As a result of the observation under controlled experimental conditions, the particles were recorded, which characterize the fact of a human photon radiation.

Wave length of the particles was 7.87008×10^{-3} (nm);
Wave frequency was 3.808×10^{19} (Hz);
Particle mass was 2.809247×10^{-31} (kg).
Mass of the particles is 3.25 times less than electron mass.

With regard to the aforementioned tests and experiments, the conclusion was drawn as follows:

“Star Dust” (SSH&H) satisfies the criteria and norms of radiation safety when taken by a human.

The divisible, radioactive properties, and the possibility of acquiring the divisible and radioactive properties by substance “Star Dust” (SSH&H) exposed to third forces, were excluded completely.

The subject substance is free from any element and possible radionuclide that could have an effect on changes in human energy in the gamma quanta spectrum.

Therewith, statistically-valid records were made of changes in human specific activity in the gamma quanta spectrum upon administration of the substance by human. Increase by the energy of $^{40}_{19}$K (1460 keV) and an unidentified peak by the energy of 157 keV.

The substance manifests its biological activity in the only case – upon interaction with the internal medium of a human organism.

- 3 –

The reactions observed in a human body are consistent with the known laws.

1. In accordance with the law of chemical equilibrium, the chemical equilibrium position is influenced by such factors as temperature, pressure and concentration of the original substances.

Temperature. At increasing temperature, equilibrium of a chemical system shifts towards the endothermic reaction (absorption), whereas at decreasing temperature the equilibrium shifts towards the exothermic reaction (evolution). In the observed reaction, at increasing specific activity in the gamma quanta spectrum, the exothermic reaction is observed in a human body, as confirmed by biological observations with statistically-valid recording of dropping mean temperature of a human body.

The pressure parameter is relevant for gases, whereas for solids pressure is not considered. The third parameter - concentration of the original substances and reaction products – can also be neglected, for the catalysts have no impact on the chemical equilibrium shift.

2. In the research, statistically-valid records were made of the fact of electromagnetic wave generation by a human in the gamma quanta spectrum, depending on the circadian (daily) cycle. In other words, a human radiates light in a certain time of the day. In the research conducted, a human was not isolated from environment, but considered a physical object interacting with the surrounding world. In other words, a human interacts with the Earth, the Sun, and can be considered as a moving source of light in the medium with constant velocity, for the orbital rotation speed of the Earth is 29.783 km/s.

It follows from the obtained results, that normal Doppler effect is observed, which is correspondent to normal radiation process – a spontaneous transition from a higher energetic state to the lower one with photon radiation. The spontaneous process is possible through energy release only. "If we assume that a radiation source is moving in a medium, and its kinetic energy is much more than the energy of the released photon. In this case, energy conservation law will not be violated, for the kinetic energy is enough for the photon release" [28].

"Thus, in order to understand the Doppler effect, it is necessary to consider the energy and pulse conservation laws to the extent applicable to a moving source of light. This returns us directly to the notable works of Einstein on the radiation theory…. Einstein's words are essential herewith, that "whatever the shape taken" by the radiation theory, "the Doppler principle… will be preserved any way". Indeed, if we assume in consideration of the quantum, that energy of the radiated photon is small as compared to the kinetic energy of motion (which is correspondent to the assumption that the motion occurs at a constant speed), than we will certainly arrive at the Doppler's classical formulas" [29].

3. The obtained results make it possible to identify the change in specific activity in a human body as a primary radiation by the energy of ^{40}K and as a secondary radiation by the energy of 157 keV.

This observation is consistent with the known law of physics.

According to the observations of astrophysics, in practice there is a primary and a secondary space radiation. Primary space radiation is considered to be mostly of the galactic origin. Primary space radiation interacts with the Earth atmosphere to generate secondary radiation. On drawing near the Earth, intensiveness of space radiation grows, which is the evidence of emergence of secondary space radiation that is formed as a result of interaction of primary space radiation with the atomic nuclei of the Earth atmosphere.

4. The experiments conducted provided a statistically-valid fact – energy redistribution in a human body. This fact is also consistent with previously obtained results from physics.

Ril N.B. [30] wrote: "In some areas of physics, the energy migration phenomena were detected, which mean that under certain conditions energy quanta can travel in substance over large distances independently from the common mechanism of energy transport by radiation or diffusing atoms and molecules, whereby each quantum travels as an integrated whole, i.e. energy of the quantum is not subject to considerable gradual dissipation on the way. "Migration" of energy, in the meaning implied hereby, occurs spontaneously, i.e. it is conditioned only by structure of the substance and does not require any auxiliary fields etc. It is also peculiar for the energy migration, that the energy travels from the initial pints to certain atoms (or groups of atoms) which serve so called "receptacles" for energy, but not to any of the surrounding atoms" [31].

"A conclusion can be drawn that in a living tissue energy is conducted by the protein substance, as it is, and that the transition mechanism corresponds to electronic energy migration" [32].

Results of the studies performed by Bucher and Kaspers, with CO – myoglobin compound exposed to ultraviolet rays as the test subject, provided an immediate proof on the protein ability to conduct quantum energy.

"Energy transmission without material increase of entropy may become one of the grounds for interpreting specific features of a life phenomenon" [33].

Academician Terenin A.N., the author of scientific discovery "The phenomenon of triplet-triplet energy transition between organic molecules", wrote about energy transition in a biologic system [34]: "Energy migration, or "wandering" is under stood as the phenomena when a quant of electronic excitation energy transmitted to one center of an extended system, for instance, as a result of photon absorption, is transported – "travels" – unexhausted to the other center, which is remote from the first one to a considerable intermolecular distance. Having

approached the second center, the quantum performs its action as a whole by either highlighting or causing some physical or chemical reaction" [35].

Thus, the statistically-valid data obtained from the experiments carried out under controlled conditions, in respect to changing human activity in the gamma quanta spectrum in the circadian (daily) cycle and in the experiments in chamber (Human Radiation Spectrometry), are consistent and compliant with the basic laws of physics and chemistry.

- 4 -

The change of specific activity in the gamma quanta spectrum in a human body by energies 1460 keV and 157 keV can be identified as a primary radiation by potassium energy - ^{40}K (1460 keV) and as a secondary radiation by the energy of 157 keV (unidentified peak).

Let's consider the physiological processes in a human body mediated by potassium. "Potassium ions are mostly contained in cells; only 2% of their quantity in the body is located in the extracellular space. Since most of the intracellular potassium is located in muscle cells, its total quantity in the body is roughly proportional to lean body mass. A man weighing 70 kg has about 3500 mEq of potassium. Normally, and in case of simple deficit or overbalance of potassium, its level can serve a good clinical index"[36].

In case of hypokalemia, when serum potassium level goes below 3 mEq/l, the symptoms include "muscle weakness, paralysis and respiratory failure. Malfunctioning of muscles can cause hypoventilation, paralytic ileus, hypotension, muscular cramp, tetany and skeletal muscles necrosis… Normally, cardiac symptoms are minimal, until serum potassium level falls below 3 mEq/l. Patients with severe cardiac disorders are the exclusion [37].

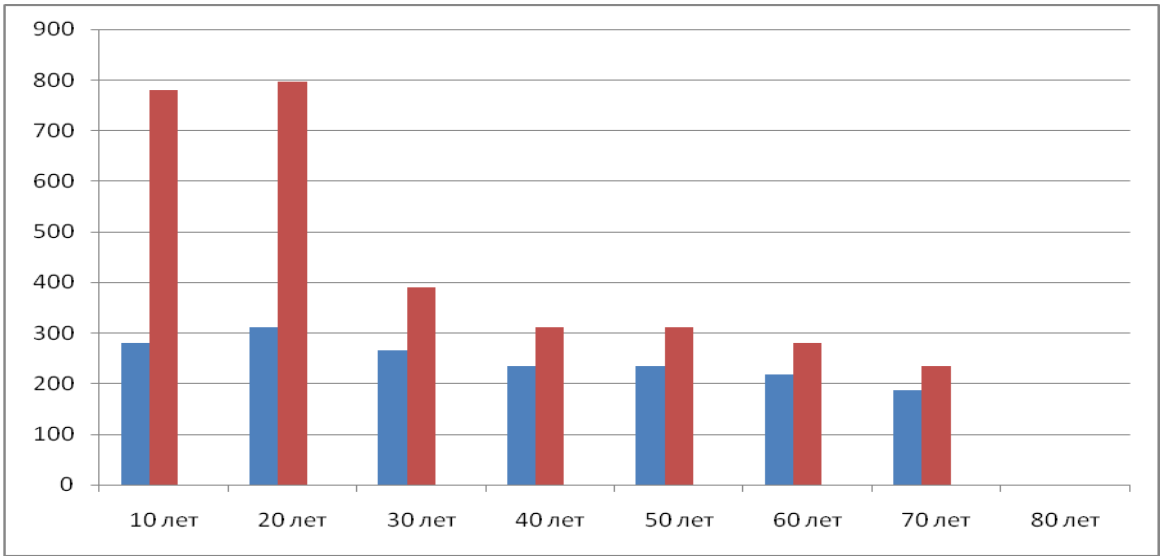
It is presently known that the heart is a fibromuscular organ. Cardiac activity is regulated by neurohumoral mechanisms and ions of Ca and K, however, the cardiac muscle possesses an automatic feature. i.e. the ability to contract under the influence of the pulses emerging in the muscle itself. With the energy support of the myocardium, 70% of the resulted energy is spent on muscle contraction and relaxation. In some reference sources potassium level is identified with normal cardiac rhythm. "Reduction of potassium level is manifested in muscular weakness and cardiac rhythm disorders" [38].

Potassium is so closely related to the heart, that blood potassium level allows for predicting the probability of cardiac rhythm disorders to a high accuracy. Generally speaking, a large part of potassium participates in cardiac muscle rhythm. In 1906 German-American physiologist and biologist Loeb Jacques performed demonstrative experiments to show the impact of potassium ions on the muscle. The muscle was placed into a weak solution of potassium salts and increased the concentration gradually to achieve the muscle contraction effect. "Undoubtedly, it has been determined so far that the phenomenon of ionic electrovalent asymmetry, which is an irregular distribution of ions inside and outside a cell, is pertinent to all the living organisms. For instance, inside the cells of muscle fibres, heart, liver and kidneys, the potassium ions concentration is raised, as compared to extracellular concentration. The researchers are concerned about the mysterious nature of a potassium – sodium pump and its functioning. Many research teams are putting their efforts to solve the issue. It is interesting that as the body grows older, potassium and sodium ions concentration gradient on the cellular border drops. As soon as the death occurs, potassium and sodium concentrations inside and outside a cell is restored immediately" [39].

The fact of electromagnetic wave generation by a human in the gamma quanta spectrum by potassium energy - ^{40}K (1460 keV) does not conflict the known facts. The wave is generated in the cardiac muscle. It is known from the medical practice, that work of the heart is accompanied by the electrical phenomena that cause emergence of electromagnetic field hear the heart. This principle underlies the work of electrocardiograph. ECG is the difference of potentials on body surface and its changing in time. The heart is a place of generation of the acoustic waves which are called heart tones, each cardiac cycle is normally divided into four tones. Heart tones can be well heard with the help of a stethoscope. From the abovementioned known facts, the fact that the heart radiates an electromagnetic wave in the gamma quanta spectrum depending on the circadian cycle is also consistent.

The very fact of human radiation in the potassium spectrum by the energy of 1460 keV can provide the only characteristic, namely, whether a person is alive or not. If there is a radiation, then the person is alive and his/her heart is beating, if there is no radiation, alas. Observations over humans show that with advancing age Δ E by the energy of 1460 keV reduces steadily. There is a relative decrease of energy bursts with advancing age. Δ E is calculated as difference between measured activity by ^{40}K of the active and passive period of the day.

Figure No. 10. (hypothetic). Change of energy in a human by ^{40}K depending on age.



Horizontal axis - age (years)

Vertical axis - MeV

Blue color - natural activity by ^{40}K, MeV, in the circadian (daily) cycle.

Red color - activity by ^{40}K, MeV, as of the moment of peak bursts in the circadian (daily) cycle occurs four times a day.

Change of energy by ^{40}K depending on age is as follows:

10 years of age - $\Delta E = 499.2$ MeV

20 years of age - $\Delta E = 483.6$ MeV

30 years of age - $\Delta E = 124.8$ MeV

40 years of age - $\Delta E = 78$ MeV

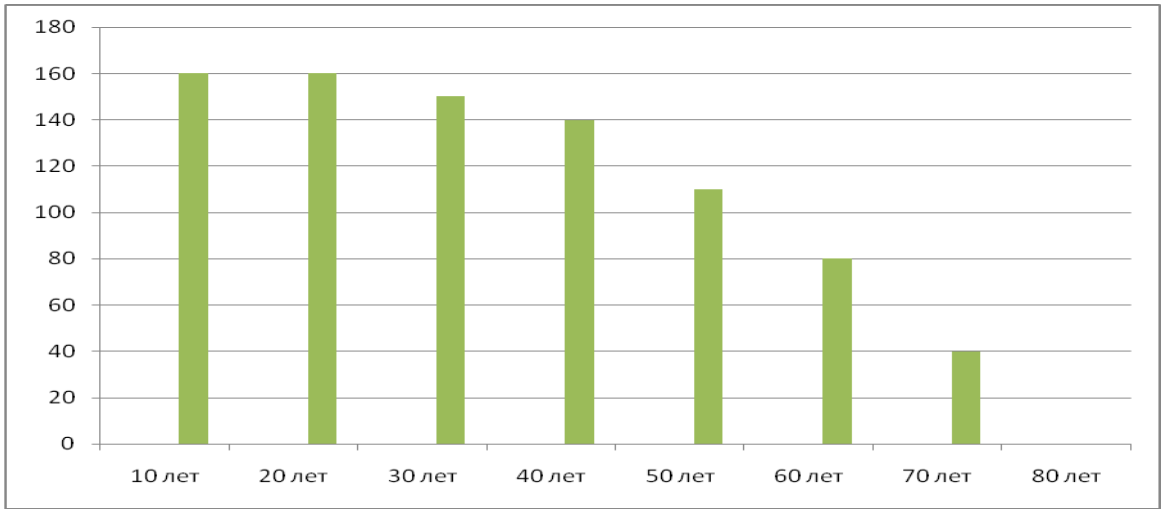
50 years of age - $\Delta E = 78$ MeV

60 years of age - $\Delta E = 62.4$ MeV

70 years of age - ΔE = 46.8 MeV

Then, after primary radiation by the energy of 1460 keV, there occurs secondary radiation by the energy of 157 keV. This is consistent with the known facts stated above in the section about human radiation correspondence with the major laws of physics and chemistry.

Figure No. 11. (hypothetic). Changing energy ΔE in a human by unidentified peak (by the energy of 157 keV) depending on age.



Horizontal axis - age (years)
Vertical axis - keV

Green color - ΔE as of the peak bursts in the circadian (daily) cycle, by unidentified peak (by the energy of 157 keV).

This peak is not observed in the circadian cycle, and its presence can be recorded only in the moments of peaks by ^{40}K.

Changes of energy by unidentified peak (by the energy of 157 keV) depending on age can be represented as follows:

10 years of age - ΔE = 160 keV

20 years of age - ΔE = 160 keV

30 years of age – ΔE = 150 keV

40 years of age - ΔE = 140 keV

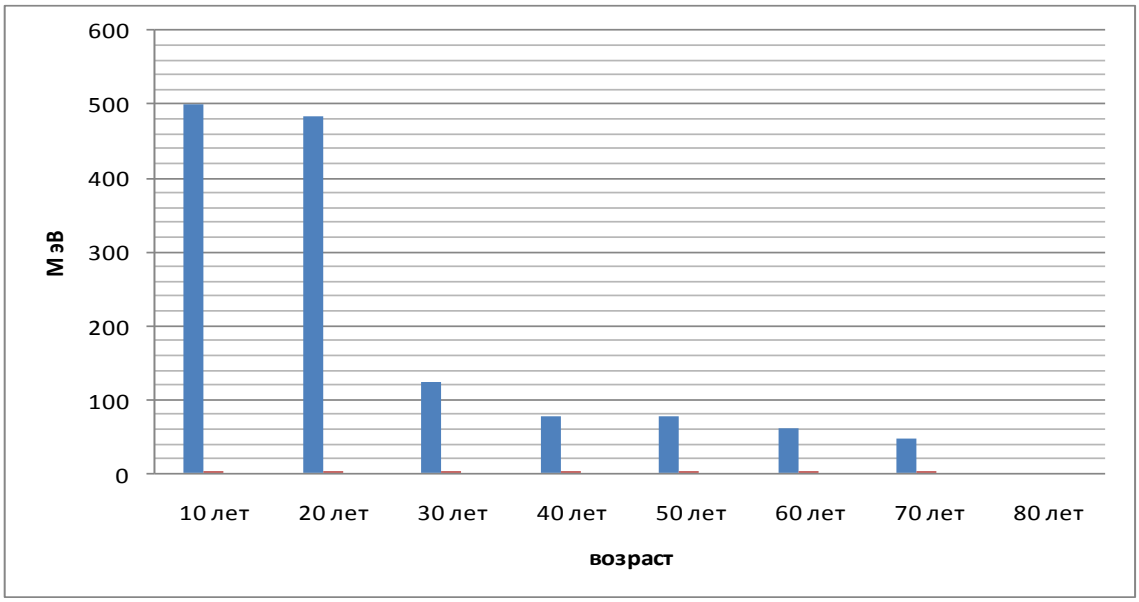
50 years of age - ΔE = 110 keV

60 years of age - ΔE = 80 keV

70 years of age - ΔE = 40 keV

Figure No. 12.

Change of ΔE by ^{40}K and by peak energy (157 keV) depending on age.



Blue color - ^{40}K;

Red color - the energy of 157 keV.

Возраст	Age
МэВ	MeV

Horizontal axis - age (years)
Vertical axis - MeV

The above figures are noted as hypothetic due to the sanitary requirements to measurement of human radiation spectrometry (HRS). Changes of human specific activity are measured in enclosed and isolated space per one person, once a month, for 45 minutes. In this connection, collection and processing of statistical information become a long-term and labor-consuming process. By now, the volume of statistical data is not enough to declare the above figures as statistically-valid, only hypothetic presentation is possible.

The cardiac muscle participates directly in the electromagnetic radiation in the gamma quanta spectrum by ^{40}K (1460 keV). This is compliant with Newton's hypothesis "on the ethereal live gas generated by heart". The energy of 157 keV, which is a secondary radiation, made it possible to calculate the mathematical parameters of the emerging particles. At the obtained particle mass $m = 2.809247 \times 10^{-31}$ (kg)[40], which is 3.25 times less than electron mass, we can speak of the emergence of "a cloud of x-gas" predicted by Kobozev for decreasing the temperature range of human brain. Electromagnetic radiation of a human in the gamma quanta spectrum by the energy of 157 keV "triggers" the mechanism of cooling the human body, and the brain area in the first instance.

The final variant of the Mendeleyev's table was described with the following words: "I therefore add a zero series, besides a zero group, to the periodic system, and place the element *x* in this zero series. I would like to preliminary name it "Newtonium" - in honour of immortal Newton". Mendeleyev's hypothesis was also true.

Various interpretation forms, such as "ethereal gas", "a cloud of x-gas", "Newtonium" are related to the same fact, namely, there were no measuring devices for the phenomena at those times. Another name of electromagnetic radiation in the gamma quanta spectrum is a photon flux, or a light flux, and light can hardly be felt by or weighed in the hands. In our work and studies in the end of the 20th century and in the beginning of the 21st century, we were also mistaken with the interpretation. "We supposed that in the course of the production cycle some additional element emerges in the composition of "Star Dust" (SSH&H). We did not have any methods for fixation and detection of the element, and we named it "Incognitium"". "Incognitium" proved to be a photon flux or a light flux.

The studies and observations performed allow for the promising conclusion that the ability of a human to generate an electromagnetic wave enables him/her to

put in order his/her biological structure, to maintain metabolic balance and thereby to decrease the temperature range by "triggering" his/her own cooling system.

Klimontovich Y.L. [41] wrote: "For instance, in Van der Pol generator, there is a transition from the heat oscillations state in the electrical circuit to the developed generation mode, with increasing value of the feedback parameter. If the states are compared at equal values of mean oscillation energy, then in the process of generation development (in the process of moving away from the equilibrium state) the entropy reduces, whereas the information grows. This provides the ground for considering the generation development process as the process of self-organization. There exists a wide class of systems (these are, first of all, biological systems) where neither absolute chaos (heat equilibrium), nor absolute order states can be implemented. The most adequate notion for such systems is "a chaotic state norm". It can be correlated with the notion of "health". Then, the process of self-recovery can be called a self-organization process" [42].

In other words, the ability to generate electromagnetic wave is identical to self-organization, and self-organization in terms of human physiology is identical to decreasing of the temperature range.

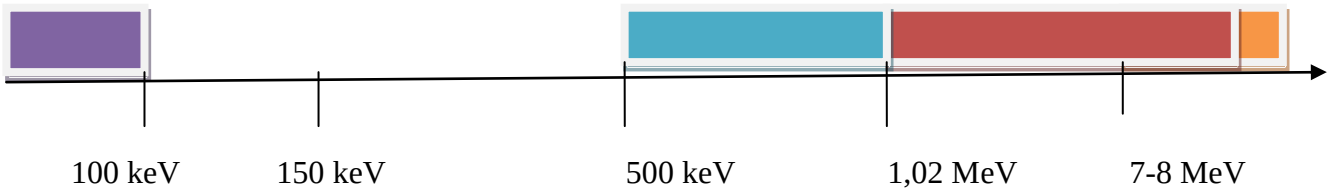
It is presently known from previous research that a human is an open quantum-biological system, and that he/she interacts with the environment in the form of an electromagnetic wave in the gamma quanta spectrum. Depending on the daily cycle, energy is redistributed, changed and released in a human. These observations indicate that a human also exchanges information with the surrounding world.

The energy of 157 keV is of special interest, because depending on power of the energy there are several types of gamma quanta interaction with a substance.

1. Photoeffect, where the mechanism of gamma quanta absorption prevails at the energy of $E_\gamma \leq 100$ keV.
2. Compton scattering, at the gamma quanta energy of 500 keV $< E_\gamma <$ 1.02 MeV.
3. Electron-positron pair formation at the energy of $E_\gamma >$1.02 MeV, which becomes the primary process of gamma quanta interaction with a substance at $E_\gamma >$ 10 MeV.
4. If gamma quanta energy is over the nucleon bond energy in a nucleus (7 – 8 MeV), a nuclear photoeffect can be observed.

Figure No. 13.

Energies of the gamma quantum interaction with the substance.



In the range of the energy by 157 keV, there are no data on gamma quanta interaction with a substance.

On the other hand, we know that "Electromagnetic radiation is the primary source of information about the Universe around us, about the processes which occur in stars, galaxies, quasars and other space objects… Sky luminance – background radiation – carries information about the radiation that fills the Universe, i.e. about the Universe as a whole" [43].

In the end, it is valid that a human generates an electromagnetic wave in the form of gamma radiation in the range of 157 keV, however, the nature of interaction between gamma quanta of this power and a substance is unknown. Herewith, a flux of gamma quanta radiated by a human carries information about the human.

Why does a human "transfer" information about him/herself that is carried into the Universe at the light speed? There is no causeless radiation. Vavilov S.I. wrote about this fact [44]: "In the classical theory, radiation occurs "at random" and anywhere. In Tetrode's theory [45], radiation in a certain point of the world and absorption in the other point are the interdependent processes. With each radiation it is predetermined where and when absorption will take place. The Sun would not radiate if it existed isolated from the rest of the Universe, and if its radiation were not absorbed by any bodies" [46].

What is the evolution meaning of human electromagnetic radiation? The research is continued on the topic in order to answer this question. On the basis of presently available statistical data and additional studies within the work schedule, there arises the need to formulate a working hypothesis.

The ability of physical objects to generate an electromagnetic wave of their own in the gamma quanta spectrum, at a certain periods, in other words, the ability to radiate light of a certain power at certain time intervals, plays a definitive role for the duration of their (physical objects) stay and stability of their state in time. For a human these are life quality and life span.

An assumption can supposedly be made that all the physical objects capable of generating an electromagnetic wave in the gamma quanta spectrum are correlating.

- 5 -

Conclusions.

The conducted research verified the hypotheses of Newton, Mendeleyev and Kobozev about the possibility of existence of the particles with mass less than electron mass and direct participation of the particles in human physiologic processes.

The definitive action mechanism of substance “Star Dust” (SSH&H), when administered by human, is as follows: the substance maintains ability of a human, regardless of his/her age, to generate an electromagnetic wave in the gamma quanta spectrum, which is a natural fact for human physiology and consistent. In the course of time, decrease in mean body temperature is observed, followed by restoration of the blood hormone profile. In the aggregate, the two effects make it possible to subject diseases of various aetiologies to remission and to perform radical stopping of the physiological ageing.

Since the observable spectrum of gamma quanta is identical to a photon flux, it seems correct to classify the substance within the photon drugs cluster.

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