

The molecular design of natural biocapsules - the alive organisms's cells . Dynamics

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Introduction

For the deepest understanding the scale processes occurring in the alive cells - a natural biocapsules which notion is correct in that cells present itself some amounts limited membrane we shall consider the forming the biological structures at the different hierarchical levels. (micro - atomic, meso-nano and macro-cells) when cells form and fission . The mitosis or indirect fission-universal, widespread way of the fission of the cells. We suppose that on the different hierarchical levels at fission of the hatches it must be used the different physical approaches.

Results and Discussion

On microlevel it can be apply the theories of the elementary particles, on the mezolevel - a theory of dissipative structures and nanophysicals approaches, on the macrolevel - a theory of the condensed ambiances with shaping and operation of the large in size biological macromolecules and organellas of the cells. In this case the microscopic level flows elementary particles and their information fields bring, on our opinion, the shaping an image future metabolities, which track record is conditioned either as in the event of processes on other hierarchical level by influence external and internal information flap. On the mesoskope nanolevel thereal structures are formed and residing in information interaction with each other.

At the macrolevel - a level of the shaping of organells and biomacromolekuls, the main role is conducted to somatic - a biological colloidal water ambience, which in depending of internal and external influence stabilizes the components of the cells and provides their necessary of conformation mobility. If we consider whole collection of the processes, occurring in the cells on the different hierarchical levels at fission of the hatches with standpoint non-equilibrium thermodynamicses, that becomes more or less clear transition from more ranked processes (the microscopic level) to more ranked (macroscope. Say in other word, condition of the chaos in cell on microscopic level with small share of the determinism moves over to conditions with more expressing determinism. Entropy of the system accordingly changes aside its reduction that, in principle, does not disagree the settled worldoutlooks about longing of the biological systems to minimization of entropy.

We consider in more detail the dynamics of the shaping and operating the cells as biocapsuls. It is known the several phases of the cells fission. Each phase is highspheric and consecutively moves over to another with united purpose - a reception of the identical new cell. The result of the multiple studies became the understanding a mechanism of passings of the phases of the cells fission (Alberts1994, Uzbekov 2007, Wheatley 1982). In present-day it is well studied their stages and processes, which run under their visualizations. However hitherto they are not correlated to level hierarchy (micro-, meso- and macro-). In context we said our considerations, processes, occurring in hutch on microscopic hierarchical level, are found for frame (in the field of virtual). Within the framework of our approach they are taken into account with the known share of the abstractions, in a part of the shaping prototype future component of the cells particularly. It is possible use the

analogy, taken from inflation theory of the origin cosmos (Rykov 2007, Linde 1984 & 1990, Lakatos 1972, Mamchur 1987, Ellis 1986, Vigner 1971, Halfin 1986). Its authors alongside with description hypothetical quantum-mechanical vacuum ("nothing"), which is built on base not yet making before the end of the theories of the united field, have offered more idle time type quantum-mechanical vacuum, which presents itself sea so named "virtual particles", fragment atom, which "nearly exist" (Rykov 2007). Now and then some of these subatomic of the particles go from vacuum in the world of the material reality. This phenomena has named vacuum fluctation. The vacuum fluctuation is impossible to observe directly, however theories, post their existence, were confirmed experimental. According to this theory, the particles and antiparticul for no reason at all arise out of vacuum and practically immediately disappear, annihilation each other.

Gut and his colleagues have assumed, that at some moment instead of tiny particle from vacuum appeared aiming Universe, and instead of that to immediately disappear, this Universe by some image has existed billion years (Rykov 2007). If we enclose the designed theories to process, occurring in cells and, considering available beliefs about analogy between micro - and microcosmos that "for frame" in the virtual field it is necessary to find the vacuum i.e. "nothing" or comply with that that hutch appeared under influence certain existing realities by way designed this reality information technology (Rykov 2007, Mamchur 1987, Feynman 1986).

It is enough described in detail the processes of the cell fission on more high level hierarchy (the mesoscope-an nanolevel and microscope). It is necessary to correlate the level a hierarchy to process of the cells fission - before "blast" kernel (the process, occurring in the mesoscope level), and after "blast" kernel (the process, occurring in microlevel). On our opinion, the mesoscope level occurs shaping a kernel with its components, presenting itself eu- and heterochromatin area of DNK, and their redublication. Visual events develop in microscope level. After kernel blast compact chromosomes are going to the certain image in zone of the equator. Themechanism of this chromosomes distribution is not realized. We think that this phenomena is conditioned presence of gravitation (that power, which links the components of the cells in united integer in analogy with beliefs about power, linking galaxies in united integer, Linde 1984) and opposite directed flow of the cytoplasm motion on both sides of the cells equator. Considering the gradient of gravitation between pole and equator of the cell the chromatids "fall" and are situated in equatorial zone of the cell. It is possible and the other scenario of the chromatid's stowage in equatorial zone of the cell.

It is possible that the equatorial zone has a gradient to density of the charge and microtubule the end of which opposite charged, on measure of its growing delete the centriol to pole of the cell. The chromosom motion is in area of the equator also possible to explain with these position. The different flow of the cytoplasm motion on different sides of the equator of the cell – the known fact. However it is no explanations, than is conditioned this different ways. We allegorize the hypothesis, founded on presence of such phenomena as mirror изомерия. As "mirrors with double reflecting surface" we consider the equator of the cells, but as "mirror izomers" - opposite directed motion of citoplasm flow. Hypothetical invisible zone of the equator, according to our hypotheses, presents itself necessary information matrix, which is filled by genetic information, which carrier are a chromosomes. Of course, this hypothesis is debate, but with provision for three oneness - a mass-energy-information it can be used for explanation of the processes of the shaping information genetic space in equatorial zone of the cells. On the microscope level (after blast kernel) simultaneously occur the processes of the destruction and shaping the new structures.

The condensed and already reduplication chromosomes move over to compact form of mitosis chromosomes, which formed reproduction spindle. It takes part in segregations and carrying of chromosomes, when the divergence of the chromosomes to opposite pole of the hutch and fission of

the body of the cells. The process of mitoses fissions of the cells is accepted divide into several main phases: prophase, metaphase, anaphase, and telophase. It is difficult to set up the exact border between these phase since mitosis presents itself unceasing process, change the phases goes gradually so one phase invisibly moves to another. The single phase, which has real begin - anaphase- the beginning of the chromosomes movement to the pole. The realignments of the nucleus device begin at the end of interphase, and the processes of the syntheses are finishing. All temporary structures of the cells disappear and cytoplasm as colloidal system on its physic-chemical characteristic changes.

The most important parameter are density and viscosity of cytoplasm. In the change of these features it can be changed velocity the motion of cytoplasm ,that finally defines the velocity of the cells fission. We consider the variety of the processes at fission and uneven distribution metabolities in the cells and their ensemble, are formed in cytoplasm local zones with different physico-chemical feature. They in there turn can form the way (the channels, surfaces etc.), on which information spreads ("run-over"), providing mitosis. Say in other words, for efficient operating the alive systems on determined stage of the cell development it is possible to try to select the corresponding to optimum parameters physico-chemical characteristic of the colloidal system (cytoplasm), small changing depending on passings of the phases in the cells fission

It is possible that this required for orientation of the cells on magnetic pole. It may be expect that pole begins two mutually opposite of the motion begin to move of centriol to the cytoplasm on sides of the equatorial zone of the cells, which given the gravitation of the chromosomes m in area in the equator of the cell. It is impossible to exactly define the approach of prophase. The best criterion for these phases is an appearance of mitoses chromosomes, which are formed as a result the condensations of chromatin'spe formation of the chromosomes is connected with necessity of «transportations» hereditary information. The structured units - chromosomes – are easy to distribute between affiliated cells and easier to transport. But not only this.

Microtubules, presenting itself biological nanotubules, forming in medium of the mitosis (but they other in contrast with initial) on the strength of capillary characteristic can concentrate in cavity all necessary systems (information) for recovering the structures after mitosis, which contact with not condensed molecule DNK can bring about their destruction. The chromosomes disperse on affiliated cells during mitosis, interacting with microtubules of mitoses spindle. Positively charged in the end of microtubules link kinetochores- a special formation on chromosome, corresponding to area of centermer.

The sisters chromatids are split during anaphase under the action of ferment from microtubules and chromosomes move to pole. It is possible, that centermer and its narrow area, where ferment can (must) show «destroying» effect. Telophase begins with chromosomes stop and ends the reconstruction new interhpase nuclear, division of the source cells to two new. In early period of telophase chromatids begin decondensation and increase in its size. In telophase begins and ends the process of the destruction of mitoses device. The main event of telophase is division of the cellar body - cytotomis, or cytokines. After cytokines the two new cells move over to the stage of interphase. Hereto time are renewed cellular synthesizes, occurs reconstruction of vacuole systems. The microtubules begin to grow from centersome and build its cytoskeleton.

With position of the thermodynamics in process of the destruction of the cellular structures and appearing chaos, seemingly, must continuously increase entropy of the cells that inevitably must bring about its ruins. It does not occur because of what is it constantly divided ensemble of the cell,

which goes the flow to negative entropy in the manner of mines information, which equivalent original (the cell).

Conclusions

In conclusion we want to note the increasing interest of the multiple researchers, working in different area of expertise to shaping and operation natural biocapsuls (the hatches) of alive organism. It seems in "Ekkleziaste" there are such word, which sense is reduced to the following: "I saw, as He has outlined the circle in abyss". Abstracting from these words, possible speak of cosmos insufficiency, in spite of its expansion, insufficiency evolution processes, cognition inconceivable, as well as processes, running for frame of each discovered phenomena. Really, we understand well what we see moreover we explain this with standpoint of the got knowledges, intuitive experience and technical possibilities. For example it can serve inconceivability of the cognition for present-day day of the processes, running on microscopic hierarchical level of the organizations and operating the hatches. Together with that, it is marked trends of the association effort scientist different area of expertise for explanation of the organizations and operating the alive systems.

The "Symbolic circle" does not disturb the observed expansion of the cosmos, also as origin and development of the new paradigms in science. We know that any thought, which is correct, since time enables creation new technology. We suppose that decryption mechanism, running on layered process of the organizations of the cells will allow to develop the new generations of the biocapsuls of different purpose.

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