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Cancer and Its Causes

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Abstract: ***An alternative explanation of what causes cancer is introduced, which gives ideas for manifold drugs treating cancer.***

Keywords: DNA, body flows, damaged flows cause cancer

In this paper an alternative explanation of what causes cancer is introduced, which gives ideas for manifold drugs treating cancer.

There are two dominating theoretical bases for understanding the mechanisms of cancer:

1) The architecture of genome is understood as how cancer occur. The hypothesis of contemporary science focus genes to be the cause of cancer, i. e., a bottom-up approach.
2) The hypothesis in this paper introduces damaged flows to be the cause of cancer. The hierarchy of flows is understood that if a superior system collapses, then all subordinate systems will collapse and cancer can occur i. e., a top-down approach.

Then, two different approaches dispute. The first starts at the level of a gene and the second starts at the level outside genes, inside the cell organelles or outside the cell, i. e., *asking if cancer starts inside the cell or if cancer starts outside the cell.*

The Principle of Relations[1] claims that DNA is an infrastructure, i. e., *the mechanism which directs and leads packages of molecules,* to be called ***transformer***, i. e., DNA transforms masses.

The principle of relations claims that the structure of the chemical components A, T, G and C organize how *incoming masses* are built. At a certain size, the cell has to divide, since it cannot handle to much incoming masses. Then, *genetic information is the physical structure of the chemical components A, T, G and C.* Even if sequences of A, T, G and C can be considered as a four-letter alphabet, it is concrete, solid and coactive chemical components, which allow flows to move in specific order, guided by the structure. When cells have to divide due to lack of space, new cells occur guided by the structure.2

Based on this conclusion, it is not genes that control when cells divide or either when cells grow, i. e., it is the flow of nutrition's. It is not oncogenes that cause cancer; it is malfunctioning metabolism and damaged flows of nutrition´s molecules.

The first hypothesis is often used in research, as the following:

"With the vast trove of data about human DNA generated by the Human Genome Project and other genomic research, scientists and clinicians have more powerful tools to study the role that multiple genetic factors acting together and with the environment play in much more complex diseases. These diseases, such as cancer, diabetes, and cardiovascular disease constitute the majority of health problems in the United States. Genome-based research is already enabling medical researchers to develop improved diagnostics, more effective therapeutic strategies, evidence-based approaches for demonstrating clinical efficacy, and better decision-making tools for patients and providers. Ultimately, it appears inevitable that treatments will be tailored to a patient's particular genomic makeup. Thus, the role of genetics in health care is starting to change profoundly and the first examples of the era of genomic medicine are upon us. "[3]

The second hypothesis claims that damaged flows cause cancer. The hypothesis starts with a new principle understanding the human body[4].

The principle is based on three stipulated postulates:

1) Nothing exists in isolation; everything exists in relations.
2) Movement is a property of reality.
3) Every concept has to represent reality directly and concretely.

The second hypothesis follows the postulate 1 above, i. e., *Nothing exists in isolation; everything exists in relations,* and that any reality is differentiated into component parts, each one of which stands in relation to another, i. e.:

1.1. It all hangs together.
1.2. Nothing exists in isolation.
1.3. It all hangs together through a relation-**R.**
1.3.1. Since it all hangs together; nothing is in isolation.
1.3.2. The relation is superior to the parts**, a, b, c …**
1.4. If the relation is superior, there will be no cause and effect between the parts.
1.5. The relation makes the parts´ existence possible.
1.5.1. Without relation the part will die and disappear.
1.6. The concept of relation explains the concept of system.
1.7. All systems are arranged in a logical hierarchy. If a superior system collapses, then all subordinate systems will collapse.
1.8. All systems of relations, at a certain time, constitute the world.
1.8.1. Everything happens only one time.
1.8.1.1. Nothing that happens will happen again.
1.8.1.2. The unique disappears and will never come again.
1.8.2. Everything which is will become something new.

Since we know the answer from the first hypothesis, we do not go any further with it at this point.

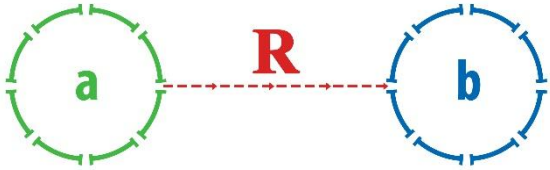
The second hypothesis´ answer, in short, goes like this:

When any network of flows is damaged, it will cause cancer.

The longer answer goes like this:

The concept relation relates to reality by showing that there are relations between all parts in the human body, where:

1) **a, b, c** … are any system, subsystem, unit, part in any field of the human body, e. g. organs, cells, organelles, nuclei, atoms and molecules.
2) The relation **R** is a flow of packages, $p_{1\text{-}n}$, e. g. neutrons, electrons, photons, proteins, fats, polysaccharides between a, b, c … in any part of the human body, illustrated by this basic model:



Based on the postulate-Nothing exists in isolation; everything exists in relations-in combination with 1 and 2 above, the principle is

X = aRb,

where X is any system, inflammation and disease[5].

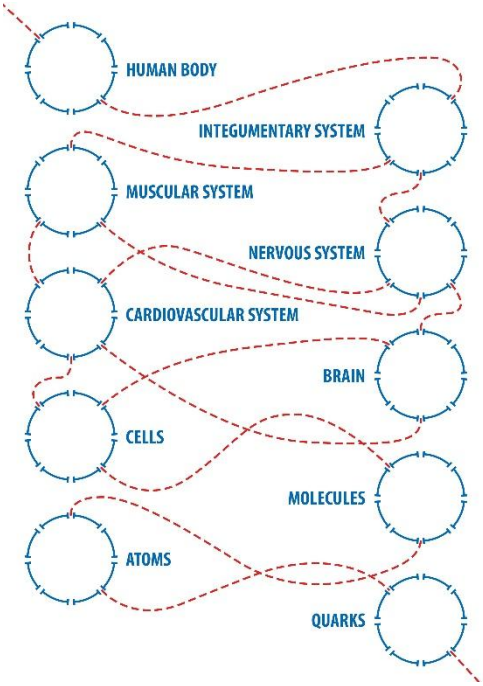
Between all systems and between all parts of any system, S, within the human body, there are continuous flows of packages $\mathbf{p_{1\text{-}n}}$, i. e., $\mathbf{R = p_{1\text{-}n}}$. The formula will be found this

$$\mathbf{S = ap_{1\text{-}n}b}$$

R contains $p_{1\text{-}n}$ and the function of R is: $R = \sum p_{1\text{-}n} = p_1 + p_2 + p_3 \ldots p_n$

This content will over time change any structure a, b, c in the human body, from the lowest element in the cells to relations between subsystems. Within the body there is complex $R_{1\text{-}n}$.

This is the model of the Human Body, based on the postulate, *nothing exists in isolation; and everything exists in relations:*



The system of the human body consists of flows of packages between different subsystems, i. e., integumentary system, S_i, skeletal system, S_s, muscular system, S_m, nervous system, S_n, endocrine system, S_e, cardiovascular system, S_c, lymphatic system, S_l, respiratory system, S_r, digestive system, S_d, urinary system, S_u and reproductive system, S_{re}.

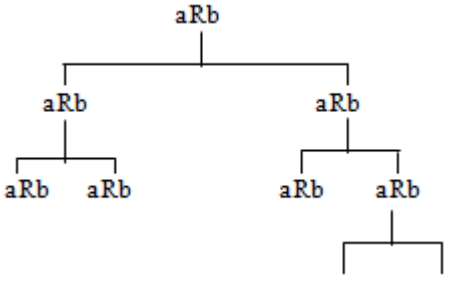
If S_H stands for the system of the human body, then

$S_H = (aRb)^{-\infty}$ consists of S_i, S_s, S_m, S_c, S_l, S_r, S_d, S_u, S_{re}, S_n and S_e, where each $S_{1\text{-}11}$ has its own system of $R_{1\text{-}10}$.
$S_H = (aRb)^{-\infty} = S_iR_1S_mR_2S_c\ R_3S_lR_4S_rR_5S_dR_6S_uR_7S_{re}R_8S_nR_9S_e\ R_{10}S_s$
Based on the postulates and the Principle X = aRb, we can look into the System of the Human Body.
With the language of the principle of relation we can summarize the system, S, for the human body, H, as

$$\mathbf{S_H = (aRb)^{-\infty}}$$

The flow of packages will over time change each of a, b, R and aRb. At t_1 the structure and its contents have one appearance and at t_2 the structure and its contents have another appearance.

When we apply the principle to the human body, the hierarchy of flows can be illustrated as below:



Now we might combine pathway and flows, since flows need pathways, but still, some flows are superior, as hypothesis 2 claims in 1.7 above.

Superior aRb dominates affecting subordinate aRb. When any superior aRb is damaged it will affect related aRb. If any superior aRb collapse, subordinate aRb related will collapse as well. This is the top-down approach.

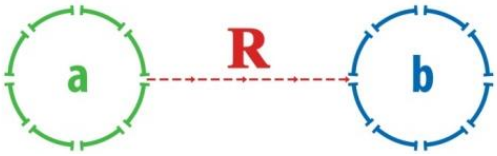
Based on the Principle or Relations diseases will occur when R is broken. A broken R is a disorder behind diseases.

Consequently cancer and degenerative diseases are not caused by genes, they are caused by damaged superior aRb, i. e., damaged flows.

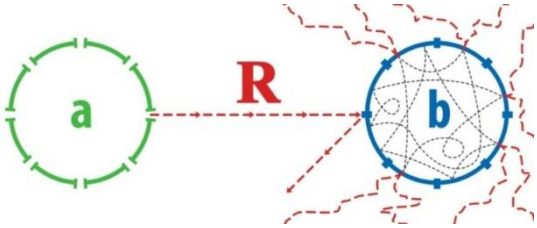
Flow-block as a cause of cancer

When gates are closed, no packages can either come in or leave the cell. Then the cell will be destroyed inside, and outside it the packages will be crowded.

The basic logic is this model:



When R is damaged, this will happen, shown by the model over cancer:



The thesis in established science is that damage of DNA causes cancer. However, based on the principle of relations it is not genetic disorder that causes and disrupts the cells´ normal functioning, since genetic disorder, if there is any, at the first point is caused by a flow-block or damaged R, i. e. damaged flows of packages, in the cell.

This investigation focuses on finding the lowest common denominator causing cancer.

Based on the principle of relations´ formula X = aRb, we can systematically investigate different types of cancer, following the basic cause; *When any network of tubules is damaged, it will cause cancer:*

1) X = Breast cancer. When the network of blood supply is damaged, it can cause cancer. The systems of arteries and veins have to be investigated to find out where damage can occur.
2) X = Lung cancer. When network of tubules is damaged, lung cancer will occur. Smoking, radon and asbestos are the most common environmental external circumstances, which then damage the network. It is mostly the tar that cut of the pathways for the flows.
3) X = Prostate cancer. When network of connective tissues between glandular is damaged, it can cause cancer. Any system in the human body has to function and normal life of sex reduce the risk, based on the theory of aRb, as well as high risk occur when this system in not used and the same goes for testicle cancer.
4) X = Kidney cancer. When any network is damaged, cancer can occur.
5) X = Brain cancer. When networks of arteries are damaged, cancer can occur. Since the brain is very complex consisting of many networks, we will start with the so-called Willis Circe, in order to find out how damaged flows of oxygen and nutrition can affect cells.
6) X = Leukaemia. When the infrastructure of bone marrow is damaged, it can cause leukaemia.
7) X = Liver cancer. Since the networks of liver contains of complex functions, such as digestive and detoxification, the causes of cancer are numerous. At this stageit is too early to identify all possible causes from networks, since many forms of liver cancer have been spread to the liver from other areas of the body. However, we need to mention the lobules of the liver, i. e., the portal triad and its connective tissue, when damaged flow can cause cancer.
8) X = Testicle cancer. Efferent ducts connect the rete testis and its network of tubules carrying sperm from the seminiferous tubules. Anastomosis connect different parts in the testicle when it is normal. If the network becomes damaged, i. e., blocked, cancer will occur.
9) X = Malignant Melanoma. The network within which the skin is part, can cause skin cancer. We need to identify how this can happen, e. g. when the ultraviolet radiation affects the cells of the skin.
10) X = Pancreatic cancer. We need to identify which network that can be damaged, since there are some, but we might start with anastomosis that join the anterior and posterior branches of the superior pancreaticoduodenal artery.
11) Etc.

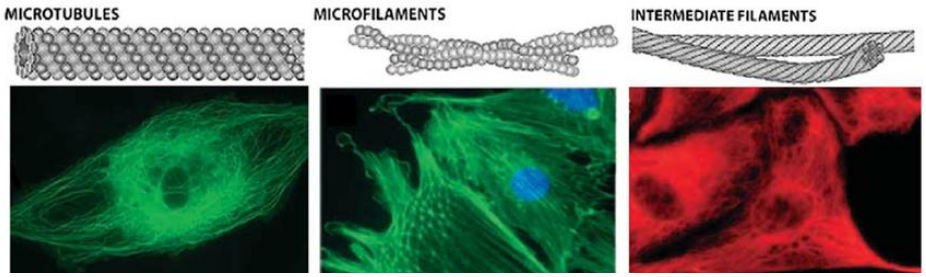
As it seems and based on the principle of relations, when any flow or network is damaged by obstacles and blocks, it will affect cells and causing cancer.

Why, where and how occur damaged flows and networks:

1) Gate failure of cell.
2) Microtubule damage.
3) Damaged flow contents.
4) Damaged anastomosis cannot fulfil its function and flows will stop. In all parts of the human body anastomosis is present, e. g. Circle of Willis, within testicles and the inferior epigastric artery and superior epigastric artery.
5) Combination of 1-4.

By using the glasses of this principle, we are mostly looking after the $R_{1\text{-}n}$, i. e., networks of relations consisting of flows and its content.7

First, we focus the concept and content of cytoskeleton, consisting of microtubules, microfilaments and intermediate filaments. The functions of cytoskeleton are complex, but dealing with diseases of cancer, we focus the dynamic network, i. e., the uptake of extracellular material (endocytosis), and organizing organelles. Cytoskeleton consists of filaments and microtubules, as the image below shows:



(Source: Network of cytoskeletal filaments [5, 8]. . . . | Download Scientific Diagram (researchgate.net))

The logistic system and its flows within the cell

The most important parts and concepts are the following:

1) Cytoskeleton
2) Microtubules
3) Microfilaments
4) Intermediate filaments
5) Axonal transport
6) Integrin

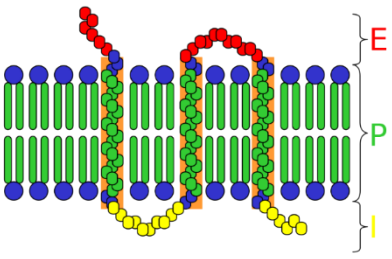
We know that, in normal opening and closing of ion channels, the flow of ions passes through the membrane of a cell. Our first suspicion is that the gate will not open, for some reason. So, how can a gate recover from inactivity?

We will now focus how damaged gates will affect cytoskeleton´s contact with the membrane and extracellular material.

How, then, connect cytoskeleton to extracellular material?

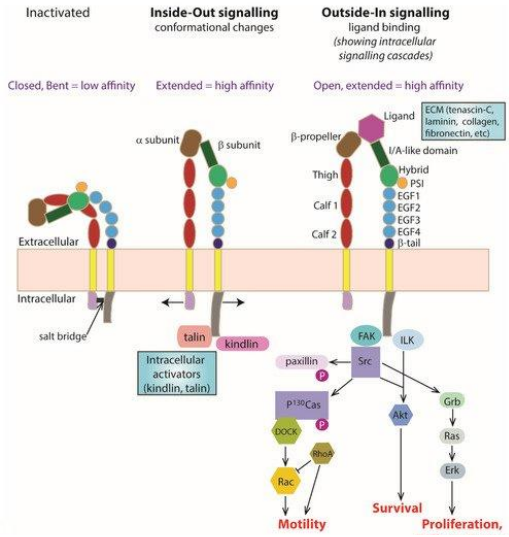
The receptor which connects cytoskeleton to extracellular material is called *integrin*, which looks like a cyclical liaison. Integrins are receptors at the surface of the cell, fulfilling its mediation.

The image below shows how this is made, where E=extracellular space; I=intracellular space; P=plasma membrane, i. e., the function of transmembrane receptor:



(Source: Cell surface receptor-Wikipedia)

Integrin connects cytoskeleton and the extracellular matrix. Based on aRb, damaged flows create cancer and if the integrin does not function it can be one possible cause for cancer. Then, the figure below can guide giving the first possible cause:



(Source: Cells | Free Full-Text | Integrin Activation: Implications for Axon Regeneration | HTML (mdpi. com))

The figure describes the integrin Structure and Activation. "Activation of integrin heterodimers leads to intracellular signalling cascades and resulting processes such as cell motility, cell survival, cell differentiation, and neurite outgrowth. Schematic representing integrin conformations at the membrane including changes that occur with 'Inside–Out signalling' and 'Outside–In signalling'. An inactivated integrin heterodimer exists with a closed and bent conformation (extracellularly) stabilised by a cytoplasmic salt bridge. This conformation has a very low ligand binding affinity. With Inside–Out signalling, intracellular activators (such as kindlin and talin) bind the β subunit cytoplasmic ally and interact/destabilise the salt bridge, leading to an open and extended (active) conformation with increased ligand binding affinity. With Outside–In signalling, binding of a ligand (ECM molecules such as laminin, fibronectin, or tenascin) extracellularly occurs as a result of integrin activation leading to a conformational change to an open and extended (active) conformation with high ligand binding affinity. Individual names of the extracellular domain components have been shown in the Outside–In signalling example for simplicity, with further explanation in the main text. " (Source: Cells | Free Full-Text | Integrin Activation: Implications for Axon Regeneration | HTML (mdpi. com))

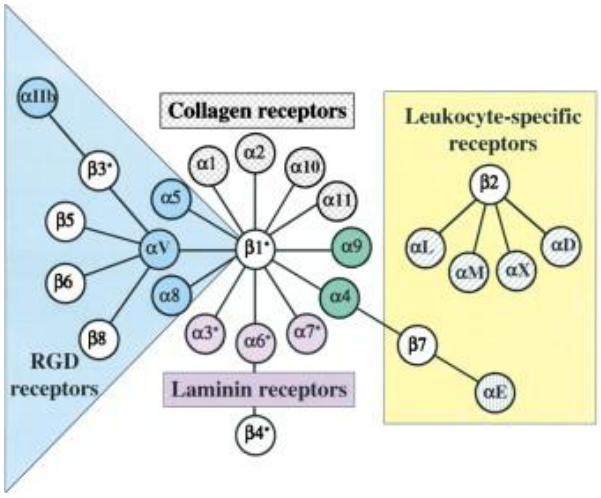
In the article *Integrin Activation: Implications for Axon Regeneration*, the authors Menghon Cheah and Melissa R. Andrews also conclude that "As integrins are essential for the proper functioning of a normal and healthy nervous

system, translational researchers in the field of axon regeneration have been trying to harvest the use of integrins following a central nervous system (CNS) injury, such as spinal cord injury, in order to recapitulate a developmental growth state that could enhance regenerative growth. ”

But, how can we find out the function of an integrin, when it is large, complex and linked to many sugar trees? (Integrin-Wikipedia)

Even after many years of research and hundreds of papers, it is not possible to find the structure of integrins.

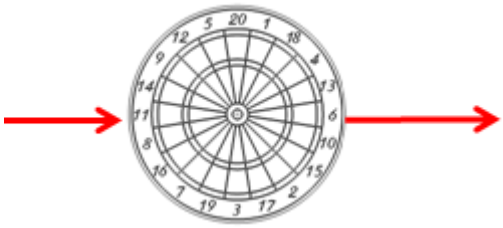
One attempt is made based on this model, made by Richard O. Hynes. (PII: S0092-8674 (02) 00971-6 (cell. com)



We are told that “integrins are αβ heterodimes; each subunit crosses the membrane once, with most of each polypeptide (>1600 amino acids in total) in the extracellular space and two short cytoplasmic domains (20-50 amino acids) …”.

Then, is the answer to the questions of the cause of cancer damaged integrin and then, how can reparation of integrins prevent and cure cancer?

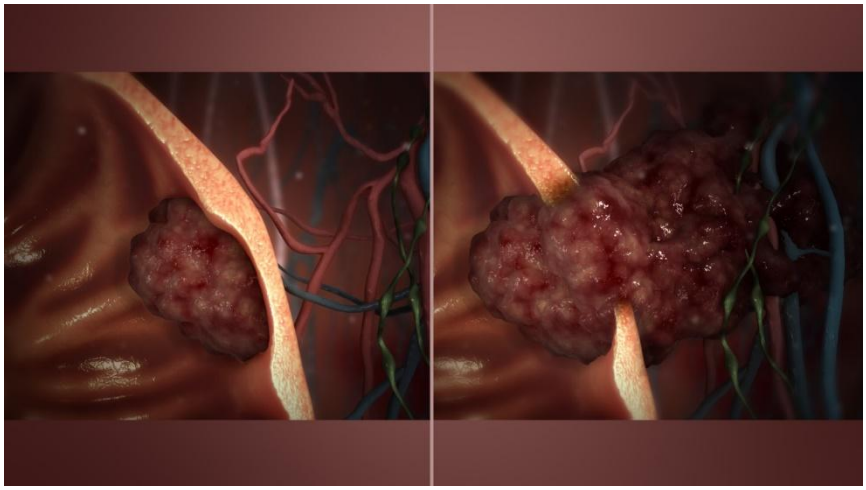
It is obvious that some transformation will fulfil the function of transportation of molecules, but it is not sure integrin has the answer. So, we might as well, based on the principle of relations, create an alternative solution, as told before the name is *transformer*. The shape of a transformer, looking like a paddle wheel, will differ depending on where it is located. The image as below might stimulate our imagination (the size will be measured in nanometres, approximately 50-200 nm), where each number can accept only one specific particle from a molecule, e. g. H, N, P, C and O, at the left side, and then a new molecule will occur, e. g. $C_{10}H_{16}N_5O_{13}P_3$, at the right side:



(It is notable that besides dealing with the human body, throughout reality the same principal mechanism of a transformer function, e. g. the Earth, the Sun, the Moon, galaxies, black holes, organs, cells and DNA in the Human Body.) [6]

Outside the cell packages will be crowded and inside the cell chaos will occur, since without any flow of nutrition panic will occur. Then, inside the cell, organelles will reorganize in order to attack its neighbourhoods’ finding nutrition.

The cancer cell, called malignant tumour, to the right, spreads aggressively invading the surrounding tissues; called benign tumour, at the left, remains self-contained from neighbouring tissue, (File: Types of tumor cells. jpg-Wikimedia Commons):



The size, shape, protein composition, texture and content of the cancer cell is changed.

How, exactly, is the cell reorganized?

The answer is of utmost importance, since then we can find the cause of the change.

Can mitochondria cause cancer?

How does cells grow? Is it caused by internal structure or is it caused by external structures? Can a cell, by itself, grow or does the cell need extracellular support? How does the combination look like? Which role does nucleus and its DNA in the cell play and which role might the mitochondria play?

The dominant cause of cancer is damaged DNA, according to contemporary science, as we have seen.

Based on X = aRb, damaged flow can create cancer.

How, then, can we find the mechanism behind the behaviour of aggressive cells? Which part in the cell will take control when survival of the cell, caused by damaged flow, is needed?

When a human, a society or a cell is threatened and death might happen, the entire focus will be on survival. So, then, which part in the cell takes this role?

How will mitochondria act if survival of the cell is threatened?

Can the function of mitochondria be used to develop cancer? What is its role in cancer?

Normally the mitochondria fulfil tasks such as producing energy from food and protecting DNA, then securing survival for the cell. Mitochondria is also signalling between cells and cell death.

Let´s call the following two hypotheses for hypothesis 3 and 4:

Hypothesis 3. Let´s start with the hypothesis that it is mitochondria that act, and then expand a plan for survival by finding energy by transforming food.

In last decade, research has studied how mitochondrial dysfunction causes many diseases, such as Alzheimer´s disease, diabetes and cancer.

Some support from science, as it seems, for hypothesis 3.

Now we have to understand how mitochondria will reorganize in order to get food for energy. How does the action plan look like? What is the content?

Besides hypothesis 3, we can formulate hypothesis 4, dealing with the entire cell.

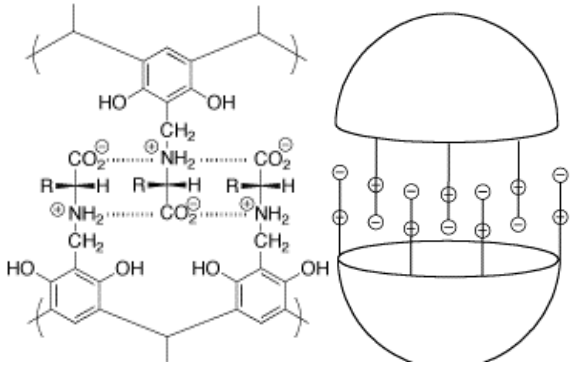
Hypothesis 4: The entire cell reorganizes in order to get food. How does the action plan look like? What is the content?
Now, let´s deal with a possible drug curing cancer, called a manifold drug.

How then can we create a manifold drug and treatment for cancer?

Starting with molecules and their atoms, then we create a new molecule as drug for cancer.

The atoms and the molecules are the following:

1) Glutamic acid using the atoms C, H, N, O and its formula $C_5H_9NO_4$
2) Ligands using the atoms H, C, O, o and its formula HCo $(CO)_4$
3) Lysine uses the atoms N, H and its formula $-NH_3^+$
4) The salt bridge uses the atoms H, O, N, R and its formula and function can be seen in these two figures, connecting two halves of the molecular capsule:



It seems obvious that the understanding of how mass moves in the human body is not fully understood.5Then we have two choices dealing with drugs and treatment for cancer:

1) By a combination of atoms and molecules, based on what has been told above, create the drug.
2) Accept one superior aRb and by its activation repair the cell.

We have to find the dominant and superior aRb, which dictates the process. We must implement a system for fulfilling flows of atoms and molecules. The flow of C – H – N – O – H – C-O – N – H – H must be reassured.

Now we have to find out how to organize this chain C – H – N – O – H – C-O – N – H – H.

Then we have to produce the molecule and find out how to inject it in the human body, i. e., how to put it in to the brain.

Of course a huge amount of work has to be done, searching all around the entire human body and all its systems of relations, flows and networks.

Now, I do really hope for help from the scientific society viewing the human body with these new glasses, trusting Thomas S. Kuhn´s wisdom:

"…when paradigms change, the world itself changes with them. Led by a new paradigm, scientists adopt new instruments and look in new places. Even more important, during revolutions scientists see new and different things when looking with familiar instruments in places they have looked before. "

"Nevertheless, paradigm changes do cause scientists to see the world of their research-engagement differently. "[7]

This is a demanding iterative process engaging hundreds of scientists and thousands of lab tests and clinical trials before the molecule becomes a drug seen as a masterpiece.

To be continued …

Notes

1) The theory was first published by Cambridge Scholars Publishing: *The Principle of Relations*.2018. The theory has been developed in the book *The Theoretical Foundation of Physical Reality*, author HOUSE, 2020. Then the book *Reality and the Paradigm of Relations* was published 2021 by Nova Science Publisher in New York.
2) DNA Transforms Masses (ijsr. net)
3) A Brief Guide to Genomics (genome. gov)
4) The Theoretical Foundation of Medicine (ijsr. net) ; The Scientific Illusion of Homeostasis (ijsr. net) and How Mass Moves in the Human Body (ijsr. net)
5) What is Inflammation? (ijsr. net)
6) DNA Transforms Masses (ijsr. net) ; Are ATP Synthase and Black Holes Scientific Illusions? (ijsr. net)
7) Thomas S. Kuhn: *The Structure of Scientific Revolutions*.2012: "…when paradigms change, the world itself changes with them. Led by a new paradigm, scientists adopt new instruments and look in new places. Even more important, during revolutions scientists see new and different things when looking with familiar instruments in places they have looked before. "