

The relevance of the molecule of melanin in the molecular biology of the future

Editorial

Molecular biology is defined as a branch of science that studies the interactions between the molecular components that carry out diverse biological processes, which, as a whole; they make up what we call life. Early indications go back to the first half of the 20th century, who sought to decipher the functioning of the cell, what constitutes a formidable challenge since the cell is something similar to a black box whose operation stops as soon as it is uncovered.

The discipline received a strong boost with the discovery of the double helix in the Decade of the 1960s. To gross mode was understood that genes are transcribed to RNA, and then the RNA is translated on very specific proteins.

By that time, he also appeared a theory seemed to explain in definitive as it was that eukaryote cell was able to assimilate energy that allegedly contained food, which seemed to give a break to biology as the unknown seemed to have no answer despite the best efforts of various research groups.

Peter Mitchell chemiosmotic theory seemed to achieve what had not been possible, combine in a way that is logical, plausible, coherent; the form in which glucose is concatenated in the middle of billions of molecules that are inside the cell, which have unique physical-chemical properties and distinct biological activities among themselves.

Every cell in our body is able to interact with the environment, as well as to communicate with other cells to create tissue, organs, and systems including complex organisms. However, there are huge gaps about how all these molecular components are produced at the time and place to operate optimally and shape what we call life.

It is a wide agreement about that cells require a constant supply of energy to generate and maintain the highly complex biological order that keeps them alive. And energy levels need to be adequate in all and each of the corners of the cell.

Given the high number of chemical reactions presents to the inside of the cell, and taking into account that each and every one of them require and therefore represent exchanges of energy; the intracellular energy levels must be kept within certain ranges of relatively strict, because otherwise the sequence, frequency and timing of processes would be altered which would eventually affect the complex functions of the cells.

I think it is important to emphasize that we are talking about chemical energy, and it is a widely held dogma that this energy is derived from the chemical bonds of food, mainly glucose, although it is accepted that fatty acids and proteins also function as energy sources when cell metabolizes them through appropriate enzymatic pathways.

It is firmly believed that food molecules are broken down in three stages in order to produce ATP. Stage three of the oxidative breakdown of food molecules, theoretically, takes place in mitochondria. Where,

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finally, the high energy electrons from NADH are passed along a non-linear electron-transport chain within the inner membrane of mitochondria. Roughly 109 molecules of ATP are in solution in an average cell at any instant, however, all this ATP is turned over every 1-2minutes.

In all, nearly half of the energy that could in theory be derived from the oxidation of glucose mainly to CO₂ and Water is captured and used to drive the energetically unfavorable reaction $P_i + ADP \rightarrow ATP$. Theoretically the rest of energy is released by the cell as heat, making our bodies warm.

However, there are many inconsistencies in the approach to the process of generation and distribution of energy from glucose, despite the decades that has to be a dogma that seemed eternal.

An example is very clear the fact that of the 7000 intracellular reactions described in the literature, only 190 there is consensus, as described in the same way in the different sources of information; but elsewhere, they persist, the date; significant controversies.

Therefore, biology and current medicine are based mainly on so far, controversial intracellular processes, because for one reason or another have failed to show it in a satisfactory manner. So it is not surprising that unknowns in biology and medicine health problems that seem unsolvable persist.

The discovery of the intrinsic property of the melanin in transforming the visible and invisible light into chemical energy through the dissociation of the molecule of water, such as chlorophyll in plants; the old dogma of glucose as a source of energy par excellence of the eukaryote cell breaks into a thousand pieces. There is no doubt that the role of the glucose as building blocks of the biomass source is very important, is essential, but in no way can bring the necessary energy for its own metabolism.

A very rooted dogma which requires is overcome and the unexpected role of melanin as a source of chemical energy will make it possible. It is necessary to do it as quickly as possible for the good of the knowledge and the health of the population; because it will allow us to significantly advance in the knowledge of the mysteries of the cell.

And in relation to disputes about more than 90% of the intracellular chemical processes will allow us to reconsider them as more

appropriate, more real, because one of the main biases is the role of ATP. To date no has been demonstrated is that the ATP releases energy when it turns into ADP, despite the best efforts of many researchers. And the reason seems simple: is that is not the case, because when the ATP becomes ADP energy absorbed. Because the phosphate compounds are kinetically stable, but thermodynamically unstable, so that, from our point of view, occur and degrade continuously to mainly control the temperature.

According to the concept that in biology, nothing makes sense except the light of evolution, the intrinsic property of melanin to dissociate the water molecule, using the visible and invisible light breaks paradigms, constitutes a new paradigm and in turn raises new questions.

The melanin is able to carry out its function both inside and outside

the body, so consistent and coherently explains the origin of life. Which was an enigma that had not failed to meet in terms of scientific, only religious?

We take step to a new era in biology and therefore also in medicine, because knowing the beginning of history, the origin of life; It allows us to consider otherwise the huge mass of knowledge that has been generated to date, but that seemed to us not carry anywhere. From now on you can later be different, just let it happen.

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Conflict of interest

The author declares no conflict of interest.