



The cellular world

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1

The model of the cell as surrounded and delimited by membrane, within which the nucleus occupies a prominent position, and surrounded by abundant cytoplasm in which various organelles are bathed—ribosomes, smooth and rough endoplasmic reticulum, the Golgi apparatus, mitochondria—was a useful model for understanding, but unrelated to the reality observed by very high-resolution microscopes.

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3

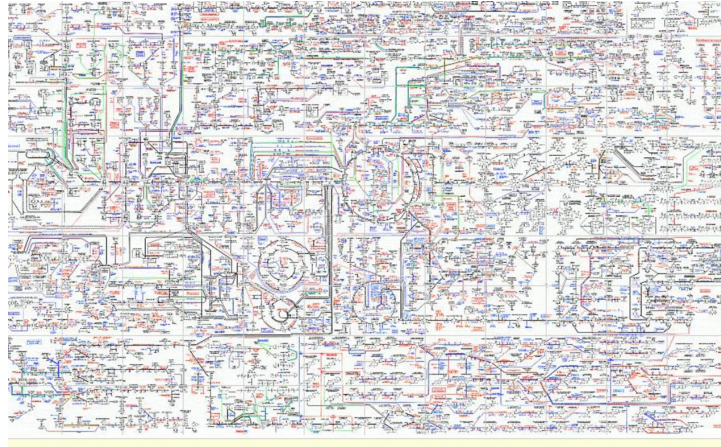
It follows that all notions of biochemistry where reactants have a low probability of meeting within a space filled with empty space is not anymore relevant, because the cell is packed with structures, molecules, and enzymes, making it very difficult for two molecules to meet.

Resonance is involved in molecular communication and is in biology is a way of superfast energy transmission.

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4

Metabolic pathways in a cell



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5

In this older model, the membrane was semi-permeable, with active transporters to allow the entry or exit of molecules, and passive channels for other substances.

Similarly, how can we explain that water diffuses through its receptors, the aquaporins, at speeds of up to 3 meters per second (which is enormous at the cellular level!) when the water molecule is much larger than the size of its receptor?

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6

The answer lies in the quantum phenomena occurring within the cell.

One of these was demonstrated by Young's double-slit experiment in 1905.

<https://www.youtube.com/watch?v=7f14cVCpvDc>

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7

Quantum physics, responsible for a major shift in perception and understanding of the surrounding universe, generated revolutionnary practical applications such as GPS, MRI, quantum cryptography, quantum supercomputers, mobile phones...

Quantum physics had their first impact in biology with the work of Pr Albert Szent-Gyorgyi and his colleagues in Szeged University, by establishing the foundations of the submoleculr biology.

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8

Several Nobel Prizes and researchers followed exploring this virgin territory, leading to major discoveries: Frohlich, Prigogine, Laborit, Popp, Mae Wan Ho, De Guidice, G. Pollack...

Little by little, discoveries revealed that the functioning of biological systems and biochemistry obeyed quantum phenomena such as the tunnel effect, solitons, etc.

But even today with more research on this field and more evidences for its reality and their implications on health and medicine, this is not yet generally accepted, nor welcomed...

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9

However, this is the best description we have today that allows us to understand the biological, biochemical and biophysical mechanisms involved in life processes such as photosynthesis, tissue respiration, the biological effects of sunlight, and the therapeutic effect of light used in photobiomodulation and photonic medicine.

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10

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https://www.digizyme.com/cst_landscapes.html (pour les 4 dernières)

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