

Biophotons: our body produces light!

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A review of work over the last seventy years on the emission of ultraweak electromagnetic radiation by human cells.

It sounds unbelievable, however, there is light in our body coming out from of at least 60 billion cells ¹. Every single cell emits light, which can be detected today with a sensitive photomultiplier system ². It is widely accepted that at least a part of the emitted light results from reactions between radicals ³, but the cell-nucleus has also been suggested to be at least a contributor to the source of this ultraweak radiation in living cells ⁴. Although the emission of this light is very low in our body cells, this very weak radiation can be efficiently induced by ultraviolet light ⁵. The first biological studies on this radiation were made in the early twenties by the Russian scientist Alexander Gurwitsch who detected this radiation in roots of onions ⁶. Some laboratories tried to confirm these results carrying out their measurements by means of counter tubes containing photoelectric metal plates. These physical methods, however, have not produced clear evidence for the existence of this very weak radiation, and finally the results of Gurwitsch were refuted by the Americans Hollaender and Klaus ⁷ just before the Second World War. For this reason, the interest in this subject declined in the following decades.

The presence of biological radiation was re-examined with the development of photomultiplier tubes in the middle fifties by Facchini and co-workers from Italy ⁸. In the sixties most of the work on ultraweak photon emission was performed by Russian scientists ⁹, while in western countries several pioneers, Quickenden in Australia ¹⁰, Popp in Germany ¹¹ and Inaba in Japan ^{2,12}, independently developed methods for ultraweak photon measurements in a variety of different cells by the use of an extremely low noise, highly sensitive photon counting system which allows maximal exploitation of the potential capabilities of a photomultiplier tube.

It was Fritz Popp who did most of the work on this very weak radiation and he also created the term 'biophotons' for the ultraweak photons emitted by cells ¹³. In the opinion of Popp photons from cells turn out to have a specific biological function but are normal photons as measured by a photomultiplier system usually used in physics.

I encountered Fritz Popp late in August 1988 and we performed biological experiments with mammalian cells. A friend of mine, Johannes Weder, a son of the anthropologist Carl Huter (1912-1961) was responsible for this meeting. Carl Huter, born in Heinde near Hildesheim in Germany, created a very interesting philosophy on human life which impressed me deeply. In this philosophy he makes a bridge between natural science, psychology and religion. For example, he described first the connection between the constitution of man and man's development from the three germ layers endoderm, mesoderm and ectoderm; a discovery which has been confirmed by the psychologists Kretschmer and Sheldon in the meantime ¹⁴. Although Huter was not an academic but self-taught, scientists like Virchow and Häckel were very impressed by him. Huter stated in his philosophy that matter is energy; a fact which is confirmed by modern physics. Brilliantly he postulated that matter consisted not only of the two qualities of static and dynamic energy, but also carried a spiritual energy. A modern physician from France, Charon, has picked up this hypothesis in the late seventies in his complex theory of relativity ¹⁵.

I performed a lot of interesting experiments in the laboratories of Fritz Popp showing that mammalian cells and especially human cells emit a very weak radiant energy which I believe confirms the assumption of Fritz Popp that there is an effective intracellular mechanism of photon trapping^{4,5,16}. We proposed that nucleic acids in the DNA may play a similar role of light trapping to that known with vitamin A in the retinal isomerization reaction, found for instance in the process of vision, and that this light-trapping system can influence metabolic and cellular events by triggering amplification mechanisms and promote photochemical processes¹⁷. This discovery confirms an ancient knowledge of humankind that light is very important in the human body and that activating his spiritual energy is the most important method to overcome stress in our modern times.

References

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