Arvydas Tamulis, Metabolomics 2014, 4:2
http://dx.doi.org/10.4172/2153-0769.S1.026

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference and Exhibition on
Metabolomics & Systems Biology
March 24-26, 2014 Hilton San Antonio Airport, San Antonio, USA

Quantum entanglement in photoactive prebiotic systems

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This paper contains the review of quantum entanglement investigations in living systems, and in the quantum mechanically modeled photoactive prebiotic kernel systems. We define our modelled self-assembled supramolecular photoactive centres, composed of one or more sensitizer molecules, precursors of fatty acids (pFA) and a number of water molecules, as a photoactive prebiotic kernel systems. We propose that life first emerged in the form of such minimal photoactive prebiotic kernel systems and later in the process of evolution these photoactive prebiotic kernel systems would have produced fatty acids and covered themselves with fatty acid envelopes to become the minimal cells of the Fatty Acid World. Specifically, we model self-assembling of photoactive prebiotic systems with observed quantum entanglement phenomena. We address the idea that quantum entanglement was important in the first stages of origins of life and evolution of the biospheres. The quantum mechanically modelled possibility of synthesizing artificial self-reproducing quantum entangled prebiotic kernel systems and minimal cells also impacts the possibility of the most probable path of emergence of protocells on the Earth or elsewhere. We also examine the quantum entangled logic gates discovered in the modelled systems composed of two prebiotic kernels. Such logic gates may have application in the destruction of cancer cells or becoming building blocks of new forms of artificial cells including magnetically active ones.

Biography

Arvydas Tamulis is Independent Expert of European Commission, Brussels, Belgium. The above research work was done in Vilnius University Institute of Theoretical Physics and Astronomy, Vilnius, Lithuania where as a doctor of natural sciences he worked in the position of senior researcher. He has 231 scientific publications and from 1992 year successfully performed 25 international scientific projects; The most interesting project for him was “Programmable Artificial Cell Evolution”. He currently works in the fields of Quantum Entanglement and Quantum Information in Nano-Biology and Molecular Medicine.

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