

**CURRENT STATUS OF THE RESEARCH ON THE CONSTRUCTION OF METABOLIC AND SELF-REPLICATING PRIMITIVE SYSTEM MODELS.** J. E. Bueno<sup>1</sup>, <sup>1</sup>Biologist Universidad Nacional de Colombia. Astrobiology Colombian Institute Carrera 7B 108A-50 Bogotá, Colombia. jorge@astrobiologia.org, jebuenop@unal.edu.co

**Introduction:** Metabolism and self-replicating are characteristics considered to be indispensable for the existence of life on earth [1]. Up to the present, researches carried out on these systems have led to the founding of two schools of thought which dispute, both of them with valid arguments, the first position within the primitive earth scenario and in it the appearance of the first “live” organism coming from the organic resources available in that environment [2]. This is an on-going dispute but, leaving aside this struggle for privilege, this paper intends to provide a brief account of the most outstanding characteristics of the principal models that favor metabolism and replication as “imminent” for the emerging of life [3].

Some models as the Oparin coacervates, the Fox protenoid microspheres, the Kauffman self-replicating peptides, the Ganti Chemoton, the Solé “design” macromolecules propose other alternatives prior to the ARN, with predecessor molecules, as it is the case of the NPA (nucleic peptic acid) and the ATN (treosa nucleic acid) [4-6]. This paper will also consider new alternatives as it is the case of the double origin models (metabolism-replication) which do not follow the classic confrontation and propose a parallel alternative to these two systems. It will also consider the symbiotic model which integrates these two systems within a new “entity” [5].

This model proposed by Ricard Solé integrates three variable systems or complexity axes (spatial-membrane, informational and metabolic) [6] which connect the older models at once raised a working hypothesis that seeks consistency between theoretical models and experimental evidence, offering the possibility of integrating into a single model that the two systems have been studied separately[7].

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