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Author: Prof.Dr. BRIJ TEWARI
University of Guyana, Guyana

CONTROVERSIAL VIEW ON TERRESTRIAL AND EXTRATERRESTRIAL ORIGINS OF LIFE

Abstract

The origins of life are one of the greatest mysteries challenge remaining for mankind. First life originate on primitive earth or came from space is still a subject of debate. The first channel of terrestrial origins of life is supported by the work of world class scientists viz : Oparin, Miller, Urey, Deamer, Ferris, Kamaluddin, Tewari, etc. Minerals catalyzed the formation of biopolymers on the primitive earth is supported by the observation that montmorillonite clay catalyzed the polymerization of activated nucleotides. The second channel of extraterrestrial origins of life is supported by the work of world class scientists viz: Anand, Oro, Chyba, Delsemme, Horneck etc. This hypothesis of origins of life is strongely supported by the detection of a large variety of organic compounds in comets and carbonaceous chondrites from interstellar medium. Exogenous theory suggests that bacteria exist in outer space and the microbial life is transported to planet earth by meteorites, asteroids and comets. The radiation resistant microbes could survive a journey from one planet to another in our solar system if they were shielded by a layer of meteorite material. The third channel of origins of life which is midway between first and second is supported by a group of world class scientists viz: Kobayashi, Oshima, Yamamoto and Ponnamperuma, etc. According to this hypothesis cosmic rays might be an effective energy source for abiotic formation of amino acids and other bioorganic compounds in the primitive atmosphere of earth as well as other planetary / commentary atmosphere. The interaction of aniline (pKa = 4.58) and p – chloroaniline (pKa = 3.98) with copper and chromium ferrocyanides has been studied at pH range 2.0 – 10.0 and at room temperature 30 1° C. At neutral pH (7.0 0.01) aniline was better adsorbed on both metal ferrocyanides. The progress of interaction was followed spectrophotometrically by measuring the absorbance of substituted amines at their corresponding max. The Langmuir type of adsorption is followed in the concentration range of 10-3 - 10-4 M of amines solutions. The adsorption copper ferrocyanide was found to be higher than chromium ferrocyanide with both adsorbates. It is clear from present study that mineral surfaces play a major role in the stabilization of organic molecules through their surface activity in fluctuating environment of primeval seas during course of chemical evolution and origins of life on primitive earth.