

July 16-21, 2017 at UC San Diego, CA, USA

## Interaction of Alanine and Aspartic acid with Aluminum, Iron and Zinc Oxides and its Relevance in Chemical Evolution

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Metal oxides are important constituents of earth crust and other planets therefore it is proposed that metal oxides present on earth or in the primeval seas must have catalyzed different biochemical reactions during the course of chemical evolution on primitive earth [1-3]. The present work described interaction of alanine and aspartic acid with aluminum, iron and zinc oxides. Adsorption of amino acids on metal oxides followed Langmuir adsorption model in general in the concentration range  $10^{-3}$  M to  $10^{-4}$  M. Langmuir constants  $b$  and  $Q_0$  were calculated. Results in present study indicated that adsorption favoured the acidic medium (pH 1.0- 4.0) followed by neutral and finally basic medium. Adsorption of both amino acids on metal oxides follow the order: aluminum oxide > iron oxide > zinc oxide. Aspartic acid was found to be highly adsorbed on all metal oxides in comparison to alanine this may be due to availability of more bonding sites on the aspartic acid. Amino acids are considered to interact with positive charge surface of the metal oxides. The present study suggested that metal oxides might have played a role in stabilization of bioorganic molecules through their surface activity during the course of chemical evolution on primitive earth.

References : [1] Lopez I (2009) *Orig Life Evol Biosph* 39: 246. [2] Muniz-Miranda M and Neto N (2009) *Orig Life Evol Biosph* 39:252. [3] Lopez-Esquivel Krankisth L ,Negron-Mendoza, Cocho-Gil, G. and Ramos –Bernol S(2009) *Orig Life Evol Biosph* 39:248.