

*Posters will be on Display for the Entire Week.
Presenters are Requested to be Present at Their Poster the Last Half-Hour Break of the Evening.*

**POSTER SESSION: EVOLUTION: THE DRIVING FORCE
FOR EVOLUTION AT THE CHEMICAL AND BIOLOGICAL STAGES
Price Center Ballroom East**

Kompanichenko V. N.

[Formation of Initial Cellular Structures Through Thermodynamic Inversion](#) [#4021]

The moment of a living unit arising consists in thermodynamic inversion, when the appeared 'over-entropy' free energy transforms the network of reactions in a prebiotic microsystem into functional way.

Ikehara K. Oi R.

[Protein 0th-Order Structure is Encoded onto GC-NSF\(a\) Base Sequence](#) [#4052]

Entirely new gene/protein is easily produced, because protein 0th-order structure is written onto antisense sequence of GC-rich gene or GC-NSF(a), so that a catalytic activity necessary to adapt for a new environment can be obtained.

Oi R. Ikehara K.

[Direct Evidence for GC-NSF\(a\) Hypothesis on Creation of Entirely New Gene/Protein](#) [#4053]

Every amino acid sequence (AAS) encoded by antisense sequence of GC-rich gene (GC-NSF(a)) of a genome was homology-searched against all proteins encoded by the same genome. It was found that entirely new gene has been generated from GC-NSF(a).

Brown G. D.

[The Diel Theory of Evolution: Shedding Light/Dark on Abiogenesis](#) [#4196]

The importance of photochemistry for abiogenesis has been appreciated since Oparin, but the day/night cycle has, surprisingly, been almost entirely ignored. The diel theory of evolution raises the rotating Earth to the status of prebiotic tinkerer.

Popović M. Ditzler M. A.

[Impact of Molecular Crowding on in vitro Ribozyme Evolution](#) [#4201]

We investigated the impact of molecular crowding on the evolution of ligase ribozymes. We evolved populations of ligase ribozymes in dilute and crowded buffered solutions.

Petrov A. S. Gulen B. Williams L. D.

[The LSU is from Mars, the SSU is from Venus](#) [#4203]

We discuss the evolution of the Ribosome within the framework of the accretion model and focus on difference and similarities between the large and small subunits in terms of their function, shape, morphology and rigidity.

Tirumalai M. R. Kaelber J. T. Park D. Chiu W. Fox G. E.

[Complexity in Ribosomal Evolution — A Case Study of an Evolutionarily Divergent Recent Insertion in the 5S RNA](#) [#4225]

Understanding ribosomal evolution is central to understanding origins of translation dating back to the RNA world and therefore could help understand better, the 'origins of life' as we know it.