

Events 2021

The roofs were reconstructed and photovoltaic panels installed. We have obtained the HR Award certificate.



Fotovoltaické panely – Biofyzikální ústav AV ČR, v.v.i



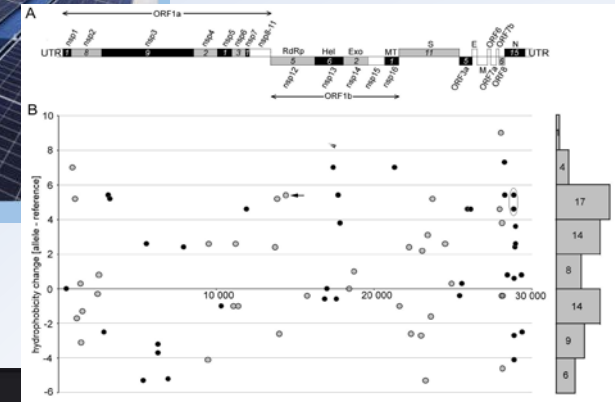
Did you know that SARS-CoV-2 is very poor in G-quadruplex forming sequences but extremely rich in inverted repeats? (1)

Moreover, these inverted repeats are hot-spots of SARS-CoV-2 mutations. (2,3)

Detailed bioinformatic analyses of all accessible viral genomes revealed that viruses causing acute infections are significantly depleted for G-quadruplex prone sequences contrary to viruses causing persistent infections which are enriched for G-quadruplex prone sequences. (4)

(by Václav Brázda et al.)

Vaclav Brazda et al. published significant discoveries about the structure of the SARS-CoV-2 virus.

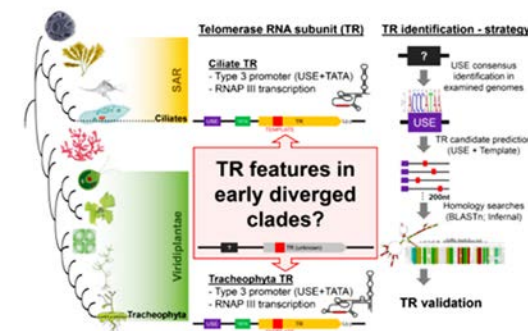


As the most important article of 2021 was selected the article written by Matyášek et al., **Mutational Asymmetries in the SARS-CoV-2 Genome May Lead to Increased Hydrophobicity of Virus Proteins**, published in Genes, 2021.

Our colleague Judit Šponer was invited by the prestigious journal Science to comment on a new study concerning the origin of life on Earth.

Evolution of Plant Telomerase RNAs: Farther to the Past, Deeper to the Roots

published in *Nucleic Acids Research*, <https://doi.org/10.1093/nar/gkab545>



Fajkus et al. present a smart strategy of telomerase RNA (TR) identification based on its conserved type-3 RNA Pol III promoter and TR template elements. The authors characterize TRs in early diverging Viridiplantae taxa, as well as in ciliates and other Diaphoretickes lineages. TRs are validated experimentally and show conservation of core TR structural domains. These results shed light on the evolution of a key eukaryotic non-coding RNA across more than a billion years.

Petr Fajkus et al. published in the journal NAR new results on plant telomeres.

Naše kolegyně Judit Šponer byla vyzvána, aby komentovala novou studii, týkající se vzniku života v prestižním časopise Science.

Judit Šponer, a chemist at the Institute of Biophysics of the Czech Academy of Sciences is impressed with the reconstruction of LUCA's (the last universal common ancestor) metabolism, and Judit agrees that a hydrothermal vent was probably where it all came together. But she does not think the other components of life necessarily arose there. The necessary pieces for life as cell membranes, metabolic reactions, a genome could have evolved in different places over millions of years, and then somehow come together. Life emerged in a variety of conditions (Judit Šponer). In detail see Science: <https://www.science.org/.../our-earliest-half-alive...>

SCIENCE.ORG
Our earliest, 'half-alive' ancestor needed little boost from heat
Life on Earth assembled itself in warm, mildly alkaline conditions, study says

A giant nanostructure and Mendel's peas were presented in the campus garden.

We have participated in a number of PR activities.

