

LETTER TO THE EDITOR

14th HOST-PATHOGEN INTERACTION FORUM 2022: A MULTIDISCIPLINARY VISION ON THE HOST-PATHOGEN MUTUAL INTERACTION

Introduction

The 14th Host-Pathogen Interaction Forum was held in Kutná Hora, Czech Republic, between November 7 - 10, 2022. The Forum was traditionally organized by the Faculty of Military Health Sciences, Hradec Králové, Czech Republic, in collaboration with the Czech Immunological Society in Prague, Czech Republic. The 14th Forum was supported from grant MV VJ01030003 obtained from the Czech Ministry of Interior. Despite current pandemic context, the organization of this meeting was a challenge that was undertaken with great enthusiasm, as the predicted dynamics of the local restrictions are likely to allow the organization of a live event.

The venues for our Forums are selected with respect to historically significant areas of the Czech Republic. The history of these meetings began at the hotel Aurum in the town of Zlaté hory in April 2001, when approximately 20 colleagues from different branches of immunology and infection biology gathered to debate basic issues of mutual interaction between hosts and microbes. The topics of the first meeting concerned primarily interactions of intracellular bacteria with eukaryotic host cells, including such relationships as parasitism, mutualism, syntrophy, and endosymbiosis. Significant topics were discussions on the eukaryotic cell origin as the result of endosymbiosis. Over time, the Forums were renamed to the Host-Pathogen Interaction Forums and were held in, for example, Valtice, Hradec Králové, Velké Karlovice, Třeboň, Mikulov, Broumov or Slavonice.

The 14th Host-Pathogen Interaction Forum 2022 was held in the beautiful and exciting city of Kutná Hora situated in the Central Bohemian Region of the Czech Republic. Kutná Hora is one of the most beautiful and historically significant Czech cities. Visitors from both the Czech Republic and abroad come here largely to see a couple of great sights – the Cathedral of St Barbara in the heart of the city and the Ossuary in suburban Sedlec. Many of the sights are associated with medieval silver mining. The town centre, itself a UNESCO heritage site, is very picturesque, with a well-preserved network of cobbled medieval alleys and small squares, various quaint shops, cafés and pubs.

Scientific meeting with international recognition

As with the previous conferences, our emphasis on giving members of the audience a range of topics from traditional main area of host-pathogen interaction and enlarged it to comprehend also other aspects of the analysis of biological material. The general basic assumption of immunity against microbes, as well as against tumors of cause, is that the response is based on the mechanisms of recognition and, equally important, on self–nonself discrimination. It is undoubtedly the case that the interactions of microbes with host cells are determined by the cell subtype with which the microbe interacts and the functional profile of expressed receptors at the microbe–host cell interface.

This year's forum was focused on traditional as well as on brand new topics of host–pathogen interactions and their consequences for both hosts and microorganisms especially on the demonstration of subcellular (organelles), cellular and systemic response of the hosts in the course of host-pathogen interactions, on the issues of biofilm formation, production of bacterial outer membrane vesicles and their role in virulence and pathogenesis, on the pathogenesis, virulence factors and gene regulation, as well as on recent knowledge obtained from -omics technologies.

The keynote lecture, “Potentials of antibody ligands with T cell receptor specificity for the immunotherapy of intracellular infections,” was presented by the member of the Learned Society of the Czech Republic, prof. Juraj Ivanyi (Centre for Host-Microbiome Interactions, Guy's Campus of Kings College London, UK). It is certainly

also worth noting, Prof. Ivanyi celebrated his significant life anniversary this year and hereby the Organizers of the Host-Pathogen Interaction Forum 2022 would wish him all the best, lots of health, well-being and ingenuity in the years to come.

The Forum program has also been extended to the microbiota with recent advances and perspectives, challenges of microbiota-host cross-talk understanding and microbiome signaling, microbe-induced carcinogenesis, and emergence topic on SARS-CoV-2 pathogenesis, immune response together with COVID-19 talks with clinical impact, immune response, prevention, and treatment.

Future perspectives

The participation of approximately 70 participants from six countries, including the USA, and the rich discussion that took place, confirms the desirability, competence, and credibility of the Forum. An attractive scientific program with excellent speakers and opinion leaders was provided a superb opportunity for broad exchange of knowledge and ideas within our international community interested in all epidemiological, preventive and therapeutic aspects of host pathogen interactions. As a promising area for a future, the analyses of mutual interactions between the host cell organelles, which are of bacterial origin, and the microbes can be one of the topics of next Forum. We all can look forward to seeing one another at the 15th Host Pathogen Interaction Forum in 2024.



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