



Genetic factors influencing the course of a SARS-CoV-2 infection: epidemiologic investigation of peptide signatures, immunity, genetic predisposition, and alterations in SARS-CoV-2 (EPI-Dx)

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Harmless, serious or even fatal: Which role do genetic factors play in the course of an infection with SARS-CoV-2?

The EPI-Dx study currently being conducted by ATLAS Biolabs, in.vent Diagnostica and MicroDiscovery investigates this question which has so far remained unanswered.

The idea for this study was born at the DiagnostikNet|BB (Netzwerk Diagnostik Berlin-Brandenburg e.V.) where companies regularly exchange information on life science topics. The project is funded by the German Federal Ministry of Education and Research, grant no. 03COV21. Coordinator of the study is Dr. Karsten R. Heidtke, head of the Bioinformatics and Research Department at ATLAS Biolabs.

During the EPI-Dx study, various clinical and molecular genetic parameters of 500 individuals will be examined. The particular research interest is on the membrane proteins ACE2 and TMPRSS2. As shown by previous research results, they are essentially involved in the viral penetration into the host cell. Since the genetic makeup varies from person to person, this results in different phenotypic expressions, leading to individual courses of the disease with or without severe complications. Genetic variants of the SARS-CoV-2 virus are also taken into account. A diagnostic panel will be developed based on the results of laboratory tests and bioinformatics analyses. This will allow evidence-based prognosis not only of the risk of contracting the COVID-19 disease, but also of its progression.

The use of high-performance sequencing and microarray technologies enables short-term scaling of the method and prompt screening of new SARS-CoV-2 variants, including their impact on the clinical course of an infection. Better understanding of individual characteristics leads to better understanding of epidemiological trends. Moreover, it can also provide promising approaches for personalised medicine and individually targeted patient care.

Thanks to their many years of expertise, the project partners ATLAS Biolabs, in.vent Diagnostica and MicroDiscovery are confident that they will be able to demonstrate the valuable know-how and

capabilities of medium-sized biotech companies from the Berlin-Brandenburg region in the fight against the SARS-CoV-2 pandemic.

About ATLAS Biolabs GmbH

ATLAS Biolabs GmbH is a pan-European research and biotech company with long-standing expertise in next-generation sequencing and DNA chip technologies. The company was founded in 2006 as a spin-off of the German Resource Center for Genome Research and the Cologne Center for Genomics at the University of Cologne. ATLAS Biolabs collaborates with research institutions, pharmaceutical and biotechnology companies as well as clinical researchers and physicians in Germany and abroad. In 2020, the company collaborated on the Corona-BUND study, a nationally representative study of the SARS-CoV-2 pandemic.

About in.vent Diagnostica GmbH

Good diagnostic products require high quality human biomaterials (sera, standards, control samples, purified proteins, and antibodies). In view of this need, in.vent spun off from the Research Department of B.R.A.H.M.S. AG in 1997. Understanding diagnostics and the resulting requirements for a good product is their basis. in.vent recognised the need for the production of in-vitro diagnostics and specialised in the secure, qualitative and ethically sound procurement of biological material. As an independent entity, in.vent has been procuring biological raw materials on a project basis since 2000, primarily for the diagnostic industry. Furthermore, since 2018, they have been conducting blood collections for their projects in their own study center "Blut Hilft Forschen".

About MicroDiscovery GmbH

MicroDiscovery is a leading provider of innovative and certified software solutions for innovative diagnostics, individualised medicine, and molecular biology research. The Berlin-based company was founded in 2000 and has already won many renowned companies as customers thanks to its high level of expertise in the realisation of customised solutions. Matching services, from biostatistical data analysis and algorithm development to bioinformatic planning and support of complex research projects, complete the MicroDiscovery GmbH offer.

About DiagnostikNet-BB

The DiagnostikNet | BB (Netzwerk Diagnostik Berlin-Brandenburg e.V.) was founded in 2007 and bundles the interests of highly innovative medium-sized companies and internationally renowned research institutes from all areas of in-vitro diagnostics in Berlin-Brandenburg and eight other German states as well as Switzerland and France. The network represents over 70 members with a total of over 6,000 employees and annual sales of more than 300 million euros.

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