

smart analytics – ASARSI project develops rapid breath test for SARS-CoV-2

Nose swabs are a thing of the past

(Stuttgart/Reutlingen) – Contexo GmbH and Mediagnost Gesellschaft für Forschung und Herstellung von Diagnostika GmbH from the STERN BioRegion are working with University Hospital Tübingen’s Institute for Medical Virology and Epidemiology of Viral Diseases to jointly develop a rapid breath test for reliably detecting bacterial and viral pathogens in the respiratory tract, especially in the case of SARS-CoV-2 infections. The ASARSI research project is receiving over 450,000 euros of funding as part of the Central Innovation Programme for SMEs (ZIM) cooperation network run by the German Federal Ministry for Economic Affairs and Climate Action (BMWK).

A dependable rapid test that is easy to use and reliably detects infections will remain a vital requirement for checks before entering hospitals and care facilities, boarding ships and planes or attending events. Two years since the outbreak of the pandemic, though, reliably identifying bacterial and viral pathogens in the respiratory tract remains a challenge, especially when it comes to SARS-CoV-2 infections. Besides necessitating careful swabbing of the nose or throat, the rapid tests available at present are often not as reliable as one might wish. Adopting an approach similar to how a breathalyser works, the rapid test of Contexo GmbH from Winterbach and the Reutlingen-based Mediagnost Gesellschaft für Forschung und Herstellung von Diagnostika GmbH is designed simply to perform an on-the-spot breath analysis and provide an immediate result indicating whether or not the person being tested is infected. Besides being accurate, reliable and easy to use, this solution is also intended to be highly adaptable when it comes to detecting other bacterial or viral respiratory tract infections.

Under the subsidised ASARSI research project, the two companies from the STERN BioRegion are working with University Hospital Tübingen’s Institute for Medical Virology and Epidemiology of Viral Diseases to jointly develop the prototype of the mobile breath-based rapid test. Having first filtered out the pathogens from the breath

sample, it produces a chemical breakdown and can then immediately establish whether the test subject is infected.

Contexo GmbH is developing a prototype single-use device for the rapid breath test, while Mediagnost Gesellschaft für Forschung und Herstellung von Diagnostika GmbH is producing a lateral-flow assay (LFA) to detect the pathogens using monoclonal antibodies. University Hospital Tübingen's Institute for Medical Virology and Epidemiology of Viral Diseases is creating a characterised virus pool of infectious SARS-CoV-2 material. It is also implementing the validations for the LFA and the functional model.

The 799,393-euro ASARSI project, which forms part of the smart analytics ZIM cooperation network, is benefiting from 454,573 euros of funding and is running for a period of 22 months. BioRegio STERN Management GmbH Project Manager, Nina Zabel, is delighted this project has got the go-ahead: "The benefits of this rapid breath test are plain to see – it is easy to use, fast and highly reliable and can be adapted to all kinds of bacterial and viral respiratory diseases, meaning nose swabs are a thing of the past."

(Approx. 3,400 characters)

About Contexo

Contexo GmbH is an international machine builder operating in the medtech and biotech sectors that designs and produces single-use products for global brands and companies. Contexo specialises in approval procedures for production, assembly and test processes, including the necessary technical system documentation and enhanced GMP-compliant approval documents.

About Mediagnost

The key skills of Mediagnost Gesellschaft für Forschung und Herstellung von Diagnostika GmbH include developing serological test methods in the indication areas of infectiology and endocrinology by turning an experimental laboratory test into a marketable test kit that meets the regulatory requirements for in vitro diagnostics. Further core competences are the large-scale production of viral and bacterial antigens, and the extraction and manufacture of monoclonal antibodies that are used as raw materials in the diagnostics industry.

About the Institute for Medical Virology and Epidemiology

The Institute for Medical Virology and Epidemiology of Viral Diseases, including its Research Section Molecular Virology, is an independent division within the Department of Diagnostic Laboratory Medicine at University Hospital Tübingen. It represents the

subject of virology in basic and clinical research, in teaching for students of human and dental medicine, molecular medicine, midwifery and nursing science, biochemistry, biology and bioinformatics, and also in patient care in the form of comprehensive diagnostics of human pathogenic viruses, specialist counselling for doctors and the training of medical specialists and specialist virologists.

About smart analytics

The Central Innovation Programme for SMEs (ZIM) run by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) is funding an international cooperation network – smart analytics – for the development of intelligent and innovative analytical methods.

BioRegio STERN Management GmbH is coordinating the international smart analytics ZIM network in Germany. The project is being funded by the BMWK and currently includes 31 partners from Europe. Other companies are welcome to become project partners. This will give them access to targeted support so that they can submit equally promising research and development applications to ZIM as necessary.

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