Virus detection kit

Development status

Phase 2

Feasibility study. There is a realistic design of the technology and the initial tests in the laboratory are leading to the specification of the technology requirements and its capabilities.

IP protection status

Utility model nr. 34900, Mobile kit for detecting viral infection

Partnering strategy

Collaboration, investment

Institution

jctt Jihočeské Univerzitní a Akademické centrum transferu technologií

University of South Bohemia in České Budějovice

Challenge

The current threat to society is the SARS-CoV-2 virus, which is a new type of highly infectious coronavirus causing COVID-19. This disease can also manifest itself in serious respiratory diseases and severe pneumonia, and is very risky for people suffering from other health problems. One of the characteristic features of SARS-CoV-2 is very high portability, that is, infected individuals without any symptoms can further transmit the virus to others. Therefore, in order to further reduce the spread of the pandemic, it is very essential to prepare a fast, accurate and ideally test kit independent on a special laboratory, so that these early infections can be effectively identified (so-called population screening) and thus control the spread of the disease.

Description

The advantage of the proposed molecular biological method called "loop mediated isothermal amplification" (LAMP) lies in the high processivity of the LAMP reaction, also in the speed (e.g. colorimetric LAMP analysis lasts about 20 minutes with an immediate visual evaluation of the result), and in modularity, since lamp analysis can use the templat from existing isolates, making it feasible in modifications e.g. at the sampling point , or in a laboratory, with both basic and sophisticated equipment. The necessary equipment for detecting a viral infection consists of: a means of sampling, a set of containers and tools, inactivation solution, extraction buffer, at least one analytical solution for the lamp method, at least one shaker, at least one laboratory centrifuge, and at least one controlled sample heating device. The kit can be easily transported to a selected location and this equipment can only be operated by a trained person, not a specialist. This equipment is more economically and logistically available compared to the equipment of a special laboratory.

Commercial opportunity

According to the technical solution, the virus detection kit can be used at collection points, sanitary stations, schools, doctors' offices, hospitals, but also in field conditions.