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Press release

Fighting endemics and epidemics in Africa

Scientists from the University of Freiburg develop a quick test to diagnose Malaria and other diseases

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The World Malaria Day on 25 April, 2016 calls to mind a widespread disease that tends to fall into oblivion in the face of global threats such as Ebola or the Zika fever. The diagnosis of tropical infections is extremely difficult given the fact, that patients have fever as their main clinical symptom even if the are infected and take place in areas which are already burdened with endemic diseases such as malaria. The co-existence of infections having fever as their clinical symptom makes the diagnosis extremely difficult. Scientists under the direction of Dr. **Konstantinos Mitsakakis** from the Department of Microsystems Engineering (IMTEK) of the University of Freiburg and the Hahn-Schickard research institute in Freiburg have developed a diagnostic tool for global health against infectious diseases in developing countries. The disc-shaped platform “LabDisk” is able to fully analyse blood samples within 60 to 90 minutes with the help of specific integrated biochemical components. The project “DiscoGnosis” is part of the strategic alliance between the University and Hahn-Schickard and is funded by the European Commission. It will finish at the end of April 2016, coinciding with the World Malaria Day.

In March, the platform was successfully tested using patients’ samples at the Institut Pasteur de Dakar in Senegal, with pathogens causing malaria, *Salmonella typhi* and *paratyphi*, chikungunya virus and different subtypes of dengue virus. The LabDisk managed to identify all the aforementioned pathogens because each test is capable of identifying up to twelve different

pathogens at once. Importantly, in cases where only chikungunya was assumed by the standard detection method – the so called polymerase chain reaction (PCR) – the LabDisk detected co-infections with dengue and malaria. Moreover, in cases of unknown dengue subtypes, the LabDisk successfully identified them. The results have proven that the platform is capable to detect any of the three main classes of pathogens: parasites, bacteria, and viruses. This enables the consortium to create a library of panels which can be employed in a “plug and play” way according to the global health needs. This will be especially helpful in areas where resources, training and affordability are limited which is the case in most of the countries primarily affected by endemic and epidemic diseases.

Due to the current Zika virus outbreak, the project partners have expressed their motivation to integrate this virus in the detection panel, thereby responding to the epidemic in a fast, coordinated and efficient way.

More information

www.DiscoGnosis.eu

www.imtek.de/anwendungen

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