

CorDial-S

Newsletter-I

Update on the achievements in the past 6 months

May 2021

The SARS-CoV-2 pandemic spreading all over Europe is having a striking impact on several sectors. When it comes to research and development, the enthusiasm of researchers and companies alike allowed that different measures have been taken in reaction to the crisis. Covid-19 related work engaged at the local and European level is still ongoing at an unprecedented speed thanks to many funded projects. CorDial-S is one of the EU supported research and innovation action, with the aim to tackle the spread of coronavirus via fast (20 min) and sensitive (100 viral particles/mL) diagnostic devices, which can also be prepared for other eventual outbreaks. Still, restrictions to travel and to exchange qualified staff does not make it easy to tackle the challenges that SARS-CoV-2 is imposing onto researcher and small companies.

The last 6 months were also challenging months for the CorDial-S consortium. The COVID-19 epidemic is restricting us from extensive traveling and exchanging in person, which would have made it much easier to cover the different aspects of the project more efficiently and faster. Also, the recruitment processes in Belgium, France and Ireland made it in particular difficult to have good working conditions to advance on CorDial-S. Nevertheless, the project advances at good pace and there are some good news to share with everybody:



1. After some struggles CHU Lille managed to get the clinical trial for CorDial-S officially approved. This is a great relief for all of us since we now have access to saliva samples and clinical testing can start in the close future. The clinical trials run under following references:

Ref of CPP: 2021/22

ID-RCB: 2021-A00387-34

Promotor: CHU DE LILLE

Ref of Promotor: 21.02.11.57302

ClinicalTrials.gov ID: NCT04780334

Title: « Détection rapide, ultrasensible et multicanaux du Covid-19 »

Type: Category 3

Agreement of the ethic committee of Ile de France IV on 7th of April 2021

2. Large progress has also been made on the nanometric constructs. Magnostics together with ULille have established a protocol for nanobody attachment and the first tests of viral capturing are ongoing.
3. On the portable SPR front, progress has been made by PhotonicSys after the visit to ULille and the first testing of the instrumentations. The decrease of noise is currently one of the aims to allow a better sensing strategy.
4. In terms of nanobodies, Fab-modified VHH-72 has shown to be the nanobody of choice in this project, since they can be attached to both the magnetic nanoparticles and the gold-based SPR chips. AMU is currently working with Colmeris MedTech for ISO certification and upscaling.
5. Photonicsys has integrated magnetic field into its system to drag magnetic nanoparticles in collaboration with Magnostics and demonstrated detection level of less than one nanoparticle per mm² area.
6. ULille has developed two different SPR chip modification strategies which are currently being validated by Magnostics as well as by ULille using classical SPR devices. Meanwhile, ULille is reaching out to find a sub-contractor for surface production; we have several exciting options with leading industrial partners in the field.
7. In terms of dissemination some important articles have been published.
 - <http://www.isite-ulne.fr/index.php/fr/2020/08/17/6443/>
 - <https://www.360dx.com/point-care-testing/french-team-awarded-23m-develop-spr-based-point-care-test-sars-cov-2>
 - <https://www.louvainmedical.be/fr/article/methodes-diagnostiques-du-covid-19>
 - <https://pubs.acs.org/doi/10.1021/acsomega.1c00166>

In the face of the COVID-19 pandemic, we are all vulnerable and have been affected by this "invisible" enemy that we all hope to eradicate as soon as possible. While virologists are focusing on researching vaccines and treatments, the CorDial-S team is at the front line in limiting eventually the spreading of the virus through the development of its fast and sensitive CorDial-S diagnostics and data analysis. The fundamentals of this diagnostics have been built in the last months thanks to the help of EU funding. The future remains bright for CorDial-S and all the partners interested in this multinational, multidisciplinary approach to help the Covid-19 crisis.

Courage to all of us

Sabine Szunerits, project leader of CorDial-S

