

SWINOSTICS – End of the project and start of the adventure!

The SWINOSTICS project addresses the need for fast and accurate field diagnostics in pig farming. To date, the time between initial disease outbreak, sample transportation and laboratory confirmation of the etiologic infectious agent **can be up to several weeks or months**. Reliable and simple diagnostic testing directly on site would enable rapid local decision making which is crucial to prevent further spreading of the disease.

SWINOSTICS has been a four-year research project journey, funded under the EU Horizon 2020 framework programme. The project had a total budget of about 3.5 million euros.

The project addressed the aforementioned need for reliable and fast, on-site diagnostics for pig farms, by developing a novel field-use device, based on advanced, proven, **bio-sensing and photonics technologies**. Even though the approach is applicable to a variety of infectious agents, SWINOSTICS focused on emerging and endemic viruses (African Swine Fever virus, Porcine Reproductive and Respiratory Syndrome virus, Porcine parvovirus, Porcine circovirus type 2, Classical Swine Fever virus, Swine influenza virus) causing epidemics in swine farms in Europe that lead to relevant economic damages. The diagnostic device allows immediate threat assessment at the farm level. The device is easily transportable and provides results in less than 60 minutes for 4 oral fluid (or other types of) samples simultaneously, making it highly suitable for use in the field. The modular construction of the device allows future upgrades to increase capacity if so desired.

The heart of the SWINOSTICS system is its photonic integrated circuit (PIC) biosensor. In a nutshell, the way that the sensor works is the following: The surface of the PIC is functionalized with antibodies against the targeted viruses. This practically means that the antibodies are bound on the surface of the sensor. Once a sample containing the targeted virus is (automatically) flown over the sensors, the molecular binding of the antibody to the target virus is detected by means of a refractive index-sensitive photonic transducer. These shifts in the refractive index are measured by the SWINOSTICS device optical module and correspond to the detection (or not) of the targeted virus. The detection is not only qualitative (yes/no answer), but also quantitative, thus making it possible to associate the analysis result with clinical signs.

The user, that may be the farm veterinarian or even a trained farmer, communicates with the device through a friendly, mobile application, while an advanced, cloud-based interface and platform is also available for detailed data processing, useful for researchers, standardization bodies, authorities or anyone that wishes to dive deeper into the collected data.

Stay tuned on the SWINOSTICS webpage and social media accounts for more updates! For the SWINOSTICS team, the end of the funded period of the project is just the beginning of the commercialisation journey!

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Notes for editors:

1. Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market.

2. For media enquiries, please contact CyRIC on +357 22 777200 or e-mail info@cyric.eu