



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 687697. The project has 10 partners from 5 EU countries.

Technical University of Denmark



CHARLES UNIVERSITY



Unilabs



Sepsis is a potentially fatal immune response to bacteria and fungi infection in the human body. Early diagnosis is crucial.

SMARTDIAGNOS will achieve 1-3 hours diagnosis time, 95% sensitivity, and 99% accuracy, decreasing morbidity and mortality up to 20%.

The SMARTDIAGNOS project will advance sepsis diagnosis by simplifying clinical sample analysis methods and integrating the currently required numerous steps into a single streamlined device. This will be achieved by combining a number of innovative technologies: 1) 3D sample concentration to process large amount of raw sample; 2) direct PCR in the 3D microstructure to circumvent DNA extraction step; 3) solid-phase PCR to achieve unlimited multiplexing capability; 4) supercritical angle fluorescence (SAF) microlens array for enhanced fluorescence detection and precise quantification of sepsis-related pathogens.