

## NanoDiaBac

Nanofluidics for ultrafast diagnosis of bacterial infections



**Project coordinator:** Fredrik Westerlund, Chalmers University of Technology, Department of Biology and Biological Engineering, Sweden, [fredrik.westerlund@chalmers.se](mailto:fredrik.westerlund@chalmers.se)

**Partner countries:**



The overall goal of the NanoDiaBac project is to develop new nanofluidic tools for the fast identification of bacterial infections and characterization of antibiotic resistance. The development of the toolbox is based on obtaining coarse-grained sequence information from individual DNA molecules extracted from bacteria. The molecules are stretched in nanofluidic channels and visualized with a fluorescence microscope. Traditional diagnostic techniques are based on bacteria cultivation, time-consuming process. The NanoDiaBac technique, in contrast, is based on examining a small number of single DNA molecules, a process which requires only an extremely small sample. It obviates time-consuming cultivation and reduces diagnostic time to hours rather than days. Fast diagnosis is beneficial to the patient by facilitating early and optimal treatment. It is also beneficial to society since it minimizes the spread of infectious bacteria and antibiotic resistance.

“The NanoDiaBac technique is based on examining a small number of single DNA molecules, a process which requires only an extremely small sample”

