Mecwins AVAC, a window opened on the world of proteins: from invading pathogens to fighter cytokines

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To be able to detect and quantify low-abundance proteins in biofluids for applications such as early disease diagnostics, highly sensitive detection methods are required. Mecwins main objective is to bring to the market its technology as a reference technique for medical testing through ultrasensitive detection of protein biomarkers, to help scientists and physicians reach the unreachable in the diagnostic field.

Mecwins uses its own revolutionary AVAC technology[1,2] based on single molecule digital counting to deliver ultra-high sensitivity, broad dynamic range, multiplexing capability, and a remarkable throughput. Mecwins' AVAC assay consists of two components: the AVAC cartridge to perform the sandwich immunoassay that relies in highly specific oriented-anchored antibodies bound to gold nanoparticles (GNPs) and to a dielectric surface (Figure 1), and the AVAC platform that functions as an optical reader and a particle counter (Figure 2).

Robustness of the AVAC technology has been demonstrated by developing several biological assays on oncology, cardiovascular, inflammatory and infectious diseases. In particular, the analytical validation of the p24 assay and the IL6 assay, that are aimed to detect early markers of HIV infection and of sepsis respectively, has demonstrated that the AVAC assays are capable to perform with a sensitivity several orders order of magnitude better than conventional assays, with good accuracy, and with excellent correlation with gold standard assays.

These results endorse Mecwins' AVAC technology as a key tool to open new options in the diagnosis and treatment, and to contribute to improve the quality of healthcare of those sections of the population particularly at risk.

References

[1] US11519843B2
[2] US11519856B2

Figures

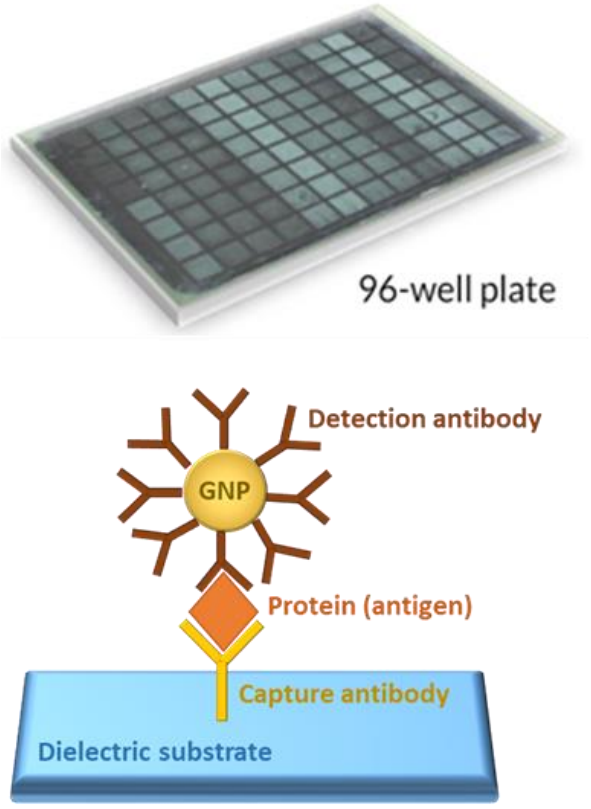

Figure 1. AVAC cartridge and sandwich immunoassay scheme.

Figure 2. AVAC platform.