

Lateral flow assays design and components: a tutorial

Daniel Quesada

ICN2, Spain

daniel.quesada@icn2.cat

Having a diagnostic tool that can be quickly deployed, at large scale, of low-cost production and that can provide in situ and fast response is of great importance, as demonstrated during COVID-19 Pandemic. Rapid diagnostic tests, a.k.a. lateral flow tests, had a key role during SARS-CoV-2 outbreak as these biosensors are portable, easy-to-use, battery/equipment-free, affordable and provide a response which can be read by naked-eye in less than 10 minutes.

The objective of this tutorial is to provide an overview of the components of a lateral flow strip, the working principle of the assay, capabilities of the test and potential for diagnostic applications. Lateral flow assays are paper-based biosensors including nanomaterials as transducers (to produce the colorimetric signal), simple technology to use, but complex to develop with a lot of hidden potential and room for improvement