

Rapid Diagnosis of Dengue Infections

Background

We developed a platform technology using Carbon Nanotube (CNTs)-based labels as a POC diagnostic tool for dengue infections. Since their discovery, CNTs have been of great interest for a wide range of applications, including diagnostics. This approach has good potential as a platform technology for rapid, sensitive and low-cost POC diagnosis of infectious diseases.

Our Technology

Dengue-specific oligonucleotides are separately conjugated onto both carboxylated SWNTs (Single-Walled Nanotubes) and streptavidin magnetic beads. If dengue virus RNA is present in patients' samples, these conjugated oligonucleotides will bind specifically to the RNA, leading to the formation of an aggregate between the SWNTs and streptavidin magnetic beads – this is detected as a positive readout. Conversely, if the sample is negative, there is no binding or aggregate formation, and the reading is recorded as negative.

Results



Negative samples
-HSV
-EV71
-CMV



Positive sample

Market Trends & Opportunities

The global In Vitro Diagnostics (IVD) market is expected to grow at a Compounded Annual Growth Rate (CAGR) of 6.8% during 2011-2018 to reach a value of \$72.3 billion by 2018. The IVD market will be driven by a shift towards preventive healthcare from curative healthcare and an increase in the incidence of infectious diseases. The global incidence of dengue has grown dramatically in recent decades, with over 2.5 billion people at risk of being infected by dengue.

With no available drugs or vaccines, rapid and accurate diagnosis of dengue infections is important for better patient management. Current tests are mainly conducted in hospital laboratories and are laborious and time consuming. To date, treatments are all based on symptoms. Hence, there is an urgent need for a rapid POC diagnostic kit for the detection of dengue infections, facilitating better clinical management.

Benefits

- ✓ Fast, accurate and specific diagnosis of dengue on-site
- ✓ No complicated lab protocols or trained professionals required.

Potential Application

- Hospitals, clinics for rapid screening etc.
- Dengue outbreak hotspot check

Intellectual Property

- Patent-Pending

Commercialisation Opportunities

- ✓ Ready for commercialisation
- ✓ Available for licensing
- ✓ Accepting business plans from interested parties

Contact Us

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