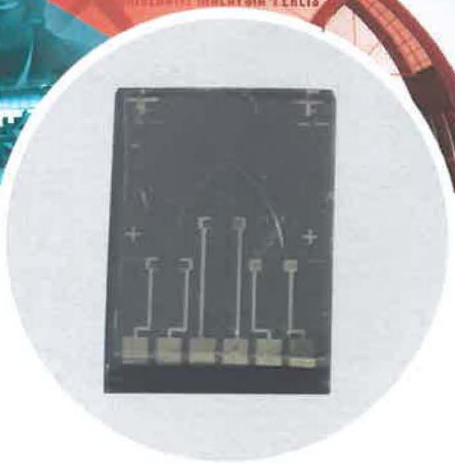

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NANO DNA LAB-ON-CHIP

MEDICAL DIAGNOSTIC SYSTEM FOR MULTI DETECTION OF LEPTOSPIROSIS

PRODUCT DESCRIPTION

The Nano DNA Lab-On-Chip is a medical diagnostic system with ultra-high sensitive and selective which is developed using carbon nanotubes/nanowires based, microfluidic-integrated biosensor for leptospirosis detection. Rapid detection at concentration as low as 1 pico molar and reusable for 5 times can be achieved by this device. Therefore, this device has huge potential in diagnostic not only for leptospirosis but other tropical diseases as well.

INVENTION ADVANTAGES

- Biocompatible.
- Small size (as big as one ten cent).
- Functionalized carbon nanotubes: binding to a broad variety of target molecule, good in affinity and specificity, easy and low cost to produce.
- Microfluidic: compact size, single cell handling and analysis, and micro droplets.

NOVELTIES

- Low cost fabrication of Nano DNA Lab-On-Chip.
- Label-free detection in static and real-time.
- Detection of ultra low concentration and high reusability.
- Rapid detection of leptospirosis.

COMMERCIAL POTENTIAL

- Highly potential for commercializing in clinical sample testing.
- Hand-held electronic device for rapid and selective detection.

APPLICATIONS

- A hand-held diagnostic device for medical practitioners for tropical diseases detection.
- A home life-care diagnostic appliance.

Figure 1: Silicon nanowire

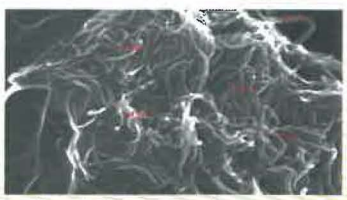

Figure 2: Functionalized carbon nanotubes

Figure 3: Comparison between DNA Lab-On Chip and ten cent sizes.

Figure 4: PDMS microfluidics.

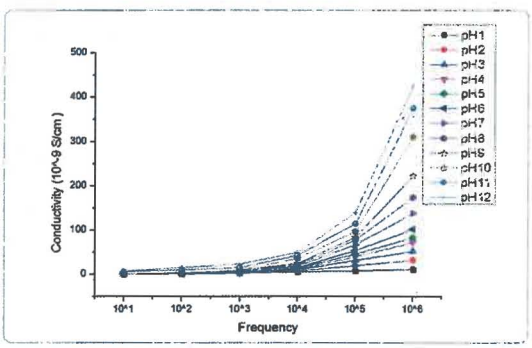

Figure 5: pH measurement.

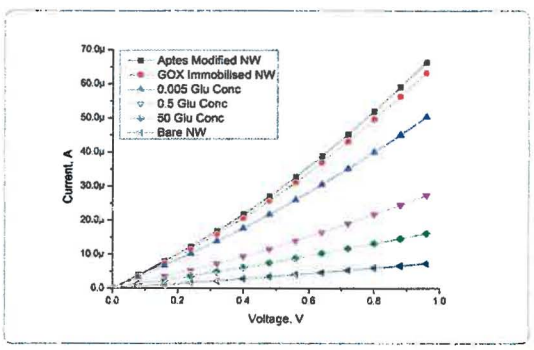

Figure 6: Measurement of glucose concentration.

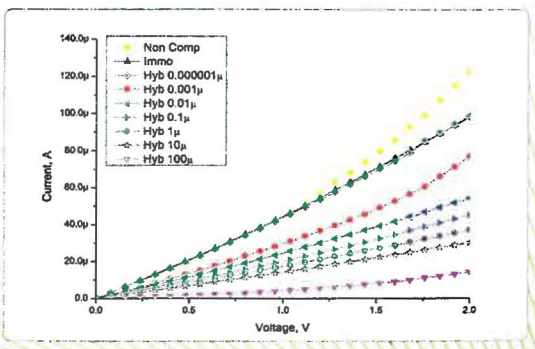

Figure 7: Measurement of leptospirosis DNA concentration.