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Device for the Direct Detection of Enveloped RNA Viruses in Biological Fluids

Graphene-based ssDNA primer device rapidly detects enveloped RNA viruses at point-of-care.

Researchers at Purdue University have developed a new method to detect enveloped bacteria and viruses. High-accuracy virus/bacteria-detection methods such as PCR require DNA amplification and are time-consuming. On the other hand, the Purdue technology rapidly detects small amounts of the RNA released when the viral/bacterial envelope is compromised under high-temperature conditions. This technology uses single-stranded DNA primers specific to a virus/bacterial strain, coated between layers of graphene and a flexible polymeric substrate. This device can be used as a platform of point-of-care testing for enveloped bacteria and viruses.

Advantages

- Rapid

- Point-of-care testing

- Non-invasive

Applications

- Platform of point-of-care testing for enveloped viruses and bacteria

TRL: Medical/Health

Intellectual Property:

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Utility Patent, 2022-10-21, United States

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