A Microscale Whole Blood Coagulation Assay Platform

Technology #6536

The properties of blood clotting in an important medical indicator for identifying blood coagulation diseases, managing hemostatic therapies, and identifying hemorrhage causes and risks during surgery. However, current testing methods are either thorough but lab-based and time consuming, or available at the point-of-care (POC) but limited in capability. A new whole blood coagulation monitoring device promises to bring real-time blood coagulation monitoring into the operating room, clinics, and patient homes, allowing rapid adjustments of medication levels and alerting patients and doctors to unexpected, potentially life-threatening changes in clotting behavior.

Microscale analysis reduces testing complexity

By utilizing microscale technology, the new device allows fast testing speeds and small blood sample volumes. These capabilities help make real-time continuous monitoring of the entire clotting process, starting with fibrin formation and ending with fibrinolysis, a reality. Electrical readouts on the device allow it to easily interface with a display to provide results, eliminating the need for a separate microscope or other optical detector commonly required for other microfluidic devices. The device can thus be easily deployed and integrated into clinical and surgical workflows.

Applications

- Hemostasis monitoring during surgery and anesthesia
- Clinical point-of-care coagulant therapy management
- Laboratory coagulation testing replacement

Advantages

- Microliter sample volumes reduces patient impact and improves usability
- Real-time continuous monitoring provides more information than any non-laboratory methods

Inventors

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