

PAPER-BASED ASSAYS FOR PRIMARY HEMOSTASIS AND THROMBOSIS

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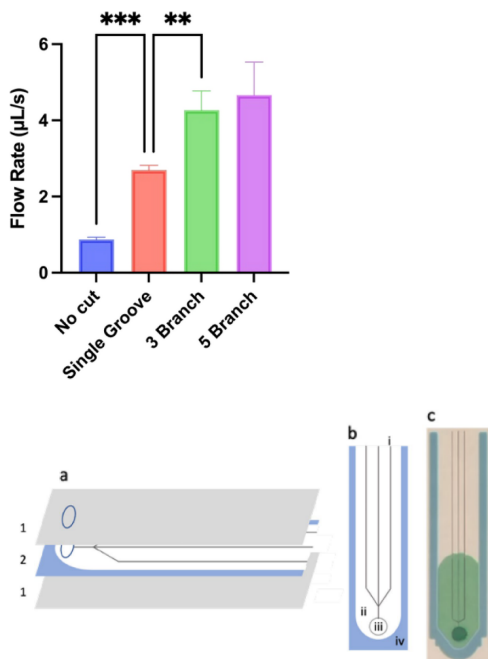
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Paper-Based Assays for Primary Hemostasis and Thrombosis

Technology Description

Researchers in Dr. David Bark's laboratory at Washington University have developed a method that allows for the evaluation of various flow-dependent pathways of hemostasis on microfluidic paper-based analytical devices (μ PADs).

Laser cut channels, specialized geometry and flow modification improve flow rates by 435% over paper alone and mimic fluid stress environments that lead to protein extension and stimulate platelet activation in hemostasis.



Left: Laser-cut grooves (b, i), branching channels with specialized geometry (b, ii), laser-cut into the filter paper (a, 2), sandwiched between laminate sheets (a, 1) and sealed with wax (b, iv) increases flow rate of μ PADs (Right).

Stage of Research

Researchers have validated the increased flow rate using dye and blood. Thrombus formation and growth is currently being validated.

Publications

Macleod Briongos I, Call ZD, Henry CS, Bark DL Jr. [Maximizing flow rate in single paper layer, rapid flow microfluidic paper-based analytical devices](#). Microfluid Nanofluidics 27:70 (2023)

Applications

Hemostatis and Thrombosis

Key Advantages

Cheap, easy alternative to more expensive tests, field-based, no power required.

Patents

Provisional filed

Related Web Links

David Bark – [Profile](#), [Lab](#)