Biomarker Signatures of Platelet Activation

Title: Biomarker Signatures of Platelet Activation

Invention: This invention is a mechanical biomarker signature of shear effects on cells for the purpose of detecting thrombosis early so it can be treated or intercepted prior to a thrombotic event.

Background: Thrombosis is a pathophysiological event that can trigger conditions like stroke or heart attack. The efficacy of many antithrombotic agents is shear dependent. Developing a better understanding of the role sheer forces play in thrombosis has many positive medical implications. Mechanical circulatory support (MCS) device performance is impacted by thrombosis and their efficacy can be improved by better understanding platelet activation.

Applications:

- Detection of shear-medicated platelet activation that can lead to thrombosis
- Differentiation of biochemical and sheer force thrombosis
- Early marker of pro-thrombotic state

Advantages:

- Allows for earlier detection
- Assists with mechanical circulatory support (MCS) device complications
- Vast clinical and research applications

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