Rapid Cell Strainer Device

A Major Qualifying Project Report submitted to the faculty of Worcester Polytechnic Institute

In partial fulfillment of the requirements for the Degree of Bachelor of Science by

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Thermo Fisher Scientific is a leading scientific technology company which produces laboratory supplies, equipment, and instruments. Current gravity-fed cell strainers have very slow straining times. The team explored the use of external force to increase the flow rate of the device, while maintaining standard cell yield and viability values. In order to test this, multiple iterations of two different prototypes were made using external force to assist in quicker filtration. Testing was performed using chick embryos at day 10-12 to test for cell yield, viability, and flow rate. The results showed an improvement in flow rate for both prototypes without a loss in cell yield, while the team's second prototype had a statistically significant loss in cell viability. The team concluded that Thermo Fisher Scientific should move forward with the first prototype due to statistically better cell viability results and ease of use. The prototypes were sent to Thermo Fisher Scientific for further research and development.

The contents of this MQP have been withheld due to intellectual property concerns.