Non-Contact Optical Tissue Formalin Fixation Monitor

This technology offers an automated system for core needle biopsy fixing. A milli-fluidic device formalin fixes the core needle bioposy which leads to consistent fixation for high throughput point-of-care monitoring and pathology.

What is the Problem?

Core needle biopsy (CNB) is a common technique for obtaining tissue samples for aiding in diagnosis and therapeutic decisions for treating various conditions such as cancer. However, the evaluation of tissues obtained via CNB can be negatively impacted by inconsistent processing prior to evaluation. For example, tissues obtained via CNB are generally immersed in formalin soon after the biopsy to preserve the tissue. However, variations in the degree of formalin fixation of the tissue that occurs during this process can cause errors in subsequent analysis of the tissue.

What is the Solution?

The solution is an automated system for core needle biopsy fixing. This is done with a modular milli-fluidic device for a non-contact and all-optical measure to determine full formalin fixation of a CNB. The system illuminates the biological sample that is within a container while a fixation process is performed, determines that the optical transmittance of the biological sample satisfies the requirements; and ceases the fixation process in response to determining that the optical transmittance of the biological sample satisfies the requirements. This is compatible with formalin as the fixation chemical but will also work for other methods that chemically cross-link organic material.

What Differentiates it from Solutions Available Today?

Existing fixation techniques can lead to variation in the degree of formalin fixation, which leads to variability during testing, giving inconsistent data. This simple design can allow low-cost and high-throughput point-of-care monitoring that can speed up sample preparation and standardize testing and reduce variability in pathology.

Patent Information:

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Technology ID

BDP 8683

Category

Device/Other

Selection of Available Technologies

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Learn more

References

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