

Novel Fixative for Improved Biomolecule Quality from Paraffin-Embedded Tissue

Summary

Researchers in the National Cancer Institute's Laboratory of Pathology have developed an improved tissue fixative solution that is formaldehyde-free. This novel fixative, BE70, significantly improves DNA, RNA, and protein biomolecule integrity in histological samples compared to traditional fixatives. Additionally, BE70 is compatible with current protocols and does not alter tissue processing. NCI seeks partners to license this technology.

NIH Reference Number

E-139-2015

Product Type

- Devices
- Diagnostics
- Research Tools

Keywords

- Paraffin, Tissue, Culture, Fixative, Histology, Pathology

Collaboration Opportunity

This invention is available for licensing.

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Description of Technology

Tissues samples collected during medical procedures, such as biopsies, are used to diagnose a wide variety of diseases. Before diagnosis, patient samples are typically processed by fixation and paraffin embedding. This fixation/embedding process is used to preserve tissue morphology and histology for subsequent evaluation. Unfortunately, most fixative agents can damage or destroy nucleic acids (RNA and DNA) and damage proteins during the fixation process, thereby potentially impairing diagnostic assessment of tissue.

Researchers in the National Cancer Institute's [Laboratory of Pathology](#) have developed an improved tissue fixative solution that is formaldehyde-free. This novel fixative, BE70,

significantly improves DNA, RNA, and protein biomolecule integrity in histological samples compared to traditional fixatives. Additionally, BE70 is compatible with current protocols and does not alter tissue processing.

Potential Commercial Applications

- Improve integrity of fixed tissue samples
- Improve RNA/DNA quality in fixed tissue samples
- Non-cross linking, improved protein quality

Competitive Advantages

- There is substantial interest in new fixatives to replace neutral buffered formalin (a carcinogen) as primary fixative agent for surgical pathology
- BE70 overcomes several limitations of other fixatives, including cost and disposal issues
- Could be formulated as a concentrate, and marketed as an additive (to be added during dilution of ethanol)

Inventor(s)

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Development Stage

- Pre-clinical (in vivo)

Publications

Perry C, et al. A Buffered Alcohol-Based Fixative for Histomorphologic and Molecular Applications. [[PMID 27221702](#)]

Patent Status

- **U.S. Provisional:** U.S. Provisional Patent Application Number 62/255,030, Filed 13 Nov 2015

Therapeutic Area

- Cancer/Neoplasm

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