

Extraction Technology Allows Researchers To Identify Genetic Information From Preserved Tissue

University of Southern California



Until an innovative extraction technology was invented at the University of Southern California, it was impossible to extract meaningful genetic information from diagnostic specimens fixed and stored in paraffin. Ribonucleic acid (RNA), a molecule that carries genetic information in a manner similar to that of deoxyribonucleic acid (DNA), could only be obtained from fresh frozen tissue samples.

The method of extracting RNA from formalin-fixed paraffin-embedded tissues was developed in 2000 by University of Southern California researchers Kathleen Danenberg, Ph.D., Peter Danenberg, Ph.D. and Stephen Swenson, Ph.D.

“ This discovery enables the extraction and analysis of genetic information from genes derived from tumor samples stored as formalin-fixed and paraffin-embedded specimens.

It allows pharmaceutical companies to create new, cost-effective platforms for the analysis of clinical trial

samples, leading to the development of more “personalized” patient therapies.

Response Genetics, a biotechnology company in Los Angeles, holds the exclusive license and has invested approximately \$13 million to further develop the process. Strategic partners include global pharmaceutical and diagnostics companies, including Hitachi, GlaxoSmithKline, Roche and Eli Lilly. Response Genetics’ laboratories, which process clinical trial samples for its pharmaceutical partners, are located in Los Angeles and Edinburgh, Scotland, with expectations to expand into Japan and China within the next year.

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