



Siemens Healthcare Diagnostics, a global leader in clinical diagnostics, provides healthcare professionals in hospital, reference, and physician office laboratories and point-of-care settings with the vital information required to accurately diagnose, treat, and monitor patients. Our innovative portfolio of performance-driven solutions and personalized customer care combine to streamline workflow, enhance operational efficiency, and support improved patient outcomes.

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Can you extract nucleic acids efficiently from all tissue sample types? Consistently? Reliably?

You can now. Introducing the only fully automated solution for the extraction of high quality nucleic acids from FFPE and fresh frozen tissues.

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A fully automated Tissue Preparation Solution from Siemens Healthcare Diagnostics



FFPE block

Providing a more efficient,
reproducible, and
consolidated process
to meet the challenges
you face in the extraction
of nucleic acids from
FFPE and fresh frozen tissues

Productivity

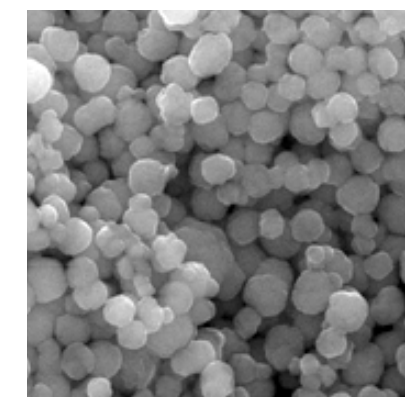
- Extraction of nucleic acids from FFPE and fresh frozen (FF) tissues in one consolidated run
- Flexible sample input including resected or biopsy FFPE tissue, pulverized or homogenized FF tissue, tissue microarray (TMA) cores, and laser capture microdissected (LCM) cells
- Co-purification of RNA and DNA from a single tissue sample using a universal reagent kit
- Hands-on time of < 30 minutes for sample handling and system set-up
- Fully automated, walk-away method including optional DNase I digestion
- Integrated deparaffinization step for FFPE tissue reduces manual labor
- Maximum flexibility with 3 protocols for total nucleic acid, pure RNA, or both from a single sample
- High throughput with flexible batch sizes of 1 to 48 tissue samples per run
- 48 tissue samples processed in about 4 hours
- Optimized for molecular testing technologies such as real-time and endpoint PCR, sequencing, and microarray

Quality Extraction

- Proprietary bead technology improves reproducibility, recovery, and quality of nucleic acids
- The homogeneous shape and size (<1 micron) of the beads provide pure, high quality nucleic acids
- Consistent nucleic acid extraction yields more robust and reliable test results
- Integrated, automated deparaffinization process improves nucleic acid integrity and reduces sample carryover

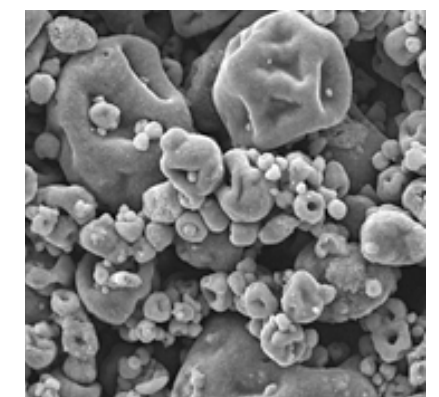
Properties of Siemens Proprietary Silica Beads	Advantages
Homogeneous shape and size	Reproducibility
Small size (< 1 µm)	Pure and high quality eluates
High iron content > 99%	Efficient magnetization
High degree of paramagnetism	Highly efficient isolation
Very stable	Reliable performance with simplified storage logistics
Different binding properties depending on buffer environment	Flexibility enabling positive and negative selection

Siemens beads



1 µm

Other commercially-available beads



10 µm



“When compared to other manual and semi-automated procedures, the Siemens method really sets a new standard in quality and workflow efficiency for routine molecular pathology laboratories.”

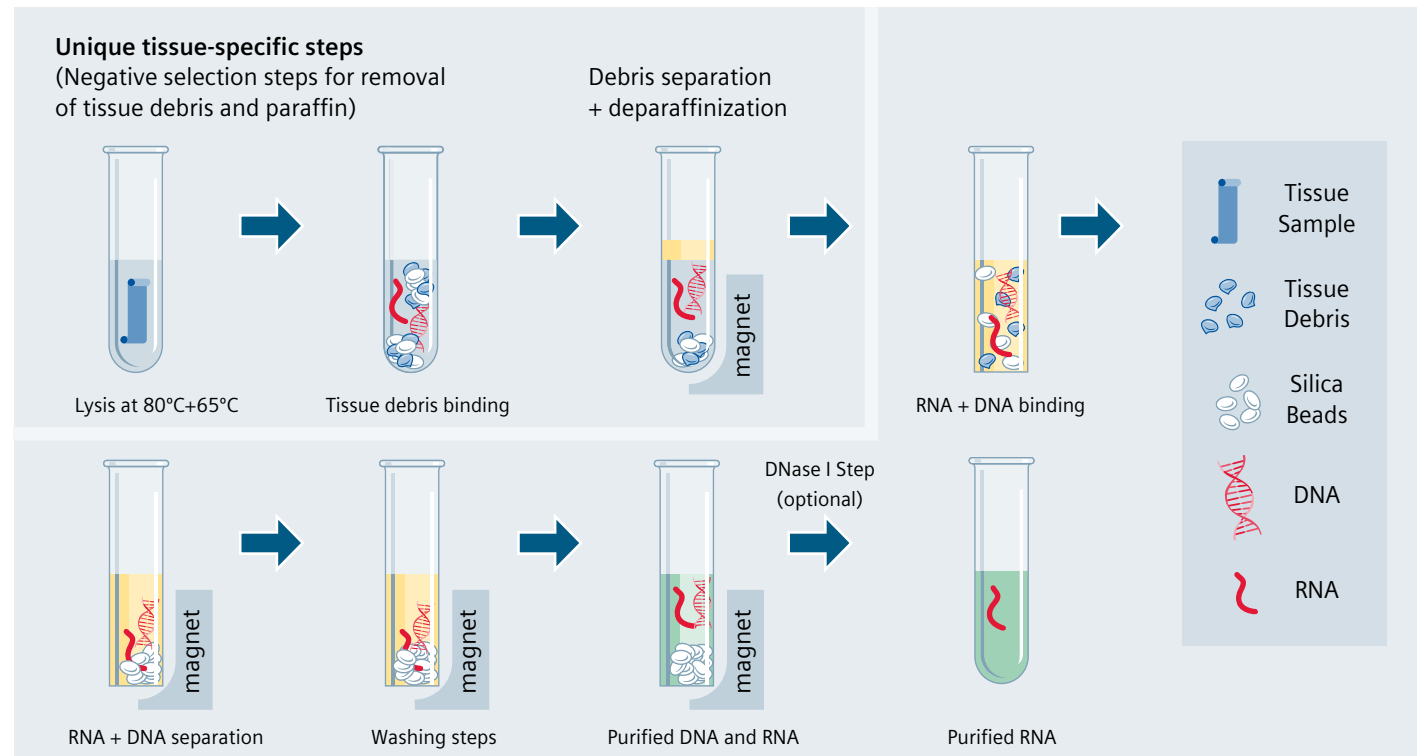
Prof. Manfred Dietel, MD
Director of Institute of Pathology
University Hospital
Charité Berlin



Employing proprietary extraction technology, the Siemens Tissue Preparation Solution delivers quality nucleic acids from FFPE and FF tissue samples with consistency and reliability.

“There are an estimated 400 million FFPE-preserved samples in tissue banks worldwide, underscoring the value of their use for analyzing DNA and genetic associations related to diseases such as cancer and autism.”

—Genetic Engineering and Biotechnology News; May 15, 2008 (Vol. 28, No. 10)



The Siemens Tissue Preparation Solution provides a fully automated workflow. The process incorporates two unique negative selection steps following lysis: removal of tissue debris through non-specific capture to silica-coated beads and removal of paraffin through hydrophobic adsorption to the inner tube wall.

	Deparaff.	Lysis	Debris Removal	Deparaff.	Target Binding	Wash	Elute	DNase I Digest	Output
Tissue Preparation Solution		A	A Debris Binding	A Hydrophobic adsorption	A	A	A	A	DNA and RNA or pure RNA

Step-by-step illustration of Siemens fully automated extraction solution. A = Automated

Semi-automated	M o.n. M	Centrifugation	A DNase A	A	DNA or RNA
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Step-by-step illustration of another commercial, semi-automated extraction solutions for FFPE tissue samples. A = Automated; M = Manual; o.n. = overnight

Optimal Performance

- Standardized lysis step for all sample types
- Uniform bead size and shape delivers highly reproducible results
- Reliable and consistent success rates of 99% for RNA and DNA yields from FFPE samples¹
- Integrated deparaffinization step for FFPE tissue samples prevents any potential loss of sample

Enhanced Safety

- Automated deparaffinization step eliminates use of hazardous xylene or other organic solvents
- Supports environmentally friendly chemical disposal while saving time
- Minimizes personal safety-related issues found in other processes
- Full automation eliminates any potential repetitive motion injury for laboratory personnel

VERSANT Tissue Preparation Reagents Kit

- One kit with universal chemistry for the isolation of both DNA and RNA from FFPE or FF tissue samples
- Includes DNase I for optional DNA digestion step for pure RNA
- Processes a total of 48 tissue samples per kit
- Manufactured under Good Manufacturing Practice (GMP)
- CE-marked and listed with the U.S. FDA
- Labeled for IVD use

1. Bohmann, K, Hennig, G, Rogel, U, Poremba, C, et al. RNA Extraction from Archival Formalin-Fixed Paraffin-Embedded Tissue: A Comparison of Manual, Semi-automated, and Fully Automated Purification Methods Clin Chem 2009; 55(9):1719-1727.

“It is remarkably easy to use and the different steps of FFPE extraction have been automated elegantly which sets it apart from other FFPE extraction systems.”

Dr. Toumy Guettouche
University of Miami, School of Medicine
Miami, FL



Tissue Preparation System

Air-displacement pipetting (ADP) technology

- Provides high accuracy and precision
- No system liquid, diluters, valves or complicated tubing is required
- Reduces risk of contamination
- Minimizes system maintenance

Compressed O-Ring Expansion (CO-RE) technology

- Achieves precise tip attachment and positioning
- Requires no vertical force for tip attachment or tip ejection
- Eliminates mechanical stress
- Improves the overall system reliability
- Improves pipetting speed and dexterity
- Eliminates aerosol production upon tip ejection

Tissue Preparation System*

- Streamlined operation and rapid start-up
- Easy maintenance and serviceability
- Innovative sample carrier design with ring-magnets enables fully integrated and automated deparaffinization step
- CE-marked and listed with the U.S. FDA
- Labeled for IVD use

Committed to your continued success

At Siemens, our goal is to provide leading-edge innovation that delivers solutions you can really use to work more efficiently, optimize results, and provide answers that ultimately enhance patient care.

*The Tissue Preparation System, a MICROLAB® STARlet IVD with Siemens-specified hardware modifications, is manufactured by Hamilton Company.

“We use the Siemens Tissue Preparation Solution as an enabling technology for our high throughput biomarker research in which we must extract nucleic acids from FFPE tissue with linked patient follow-up.

The Siemens method provides high throughput and complete automation including an integrated, xylene-free deparaffinization step.

We currently apply the extraction technology for the identification and validation of RNA expression profiles for molecular staging and prediction of chemotherapy in colorectal cancer.”

Prof. Dr. rer. nat. Michael Stürzl
Universitätsklinikum Erlangen
Department of Surgery
Division of Molecular and Experimental Surgery
Erlangen, Germany



Tissue Preparation System Technical Specifications

Dimensions	0.903 m H x 1.124 m W x 1.2 m D
Weight	145 kg
Power Requirements	115-230 VAC±10%; 200-240 VAC±10%; 50-60 Hz; 500 VA maximum
Environment	18-30°C; 24-80% relative humidity, non-condensing; 0-2000m altitude
Integrated computer	Windows® XP Operating System

Please contact
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