

# Applied Biosystems® Arcturus® HistoGene® LCM Frozen Section Staining Kit

Prepare Frozen Tissue for LCM While Maintaining High-Quality RNA

## Benefits

- Simplified tissue staining and dehydration typically in less than 5 minutes
- Preserves RNA quality
- Validated formula provides good contrast



Figure 1. The Applied Biosystems® Arcturus® HistoGene® LCM Frozen Section Staining Kit.

The Applied Biosystems® Arcturus® HistoGene® LCM Frozen Section Staining Kit from Life Technologies comes complete with all the reagents and supplies needed for preparing frozen tissue sections for LCM. Dehydration and staining solutions, slide jars—even specially coated glass slides—are included, along with a detailed, step-by-step protocol (Figure 1). LCM certified, the HistoGene® kit permits consistent preparation of quality samples ready for laser capture.

## Provide Superior Staining While Preserving RNA

HistoGene® Stain is a special solution designed to stain tissues for LCM that are subsequently used as sources of RNA. It is a fast penetrating stain that provides good contrast by differential staining of nuclei (purple) and cytoplasm (light pink) (Figure 2). By minimizing the exposure of tissues to water where nucleases may be activated, the HistoGene® process helps to preserve RNA integrity that may be otherwise compromised when using longer staining protocols.

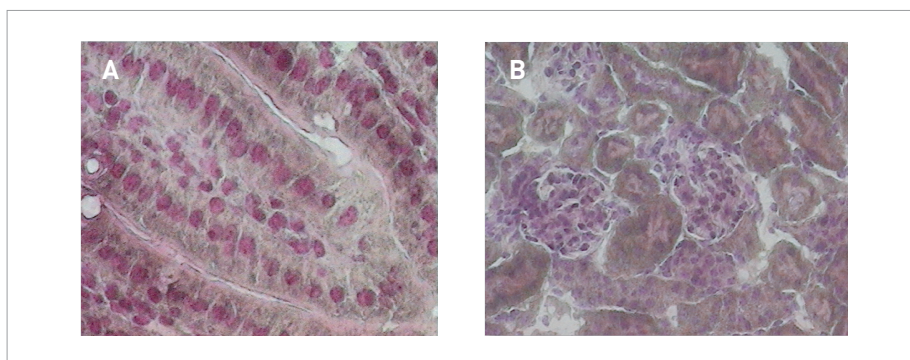


Figure 2. Examples of Tissues Prepared With the Applied Biosystems® HistoGene® Frozen Section Staining Kit. (A) Mouse small intestine. (B) Mouse kidney.

### Retain Low-Abundance mRNA

RT-PCR analysis of specific genes from cells captured from tissues processed using the HistoGene® kit shows retention of both low-abundance mRNA and higher-abundance species (Figure 4). The mRNA profile of HistoGene® samples appears free of degradation.

### Maintain RNA Integrity

Tissues prepared for LCM using HistoGene® kit reagents, supplies, and instructions yield high-quality RNA. Data from electrophoretic analysis of total RNA, and RT-PCR analysis of specific genes confirm retention of RNA integrity.

### Produce Superior Microarrays

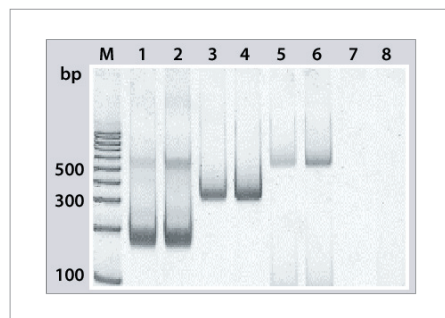
The HistoGene® LCM Frozen Section Staining Kit is one member of a growing family of Applied Biosystems® Arcturus® products from Life Technologies designed to seamlessly work together to produce high-quality microarray expression results (Figure 5). Using the PicoPure® RNA Isolation Kit, RNA can be recovered with high yield in a minimal volume from as few as 10 cells. Picogram quantities of RNA in samples prepared using the kit can be amplified to microgram amounts using the RiboAmp® RNA Amplification Kit, providing RNA ready for labeling and hybridization to microarrays. When used in combination, Applied Biosystems® Arcturus® instruments and kits help increase the reliability and reproducibility of gene expression studies performed on microarrays.

### Obtain High-Quality RNA from Many Tissue Types

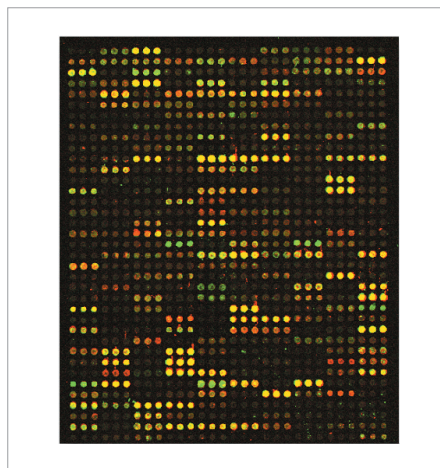
The HistoGene® kit has been validated by examining RNA integrity on an expanding list of tissue types. All tissues tested to date using the HistoGene® kit have yielded high-quality RNA (Table 1).

Table 1. Tissues Validated with the HistoGene® Kit.

Human	Mouse	
Foreskin	Kidney	Salivary Gland
Ileum	Liver	Thymus
Jejunum	Brain	Small Intestine



**Figure 4. Detection of Low-Abundance mRNA in HistoGene® Samples.** RT-PCR performed on RNA from 500 cells captured from mouse liver and kidney. Equal quantities of cDNA analyzed with three primer sets: Elongation Factor 1-a (EF-1a, high-abundance gene, ~3,000 copies/cell, 187 bp), Glyceraldehyde-3-phosphate Dehydrogenase (GAPDH, medium-abundance gene, 300–3,000 copies/cell, 357 bp), and Protein Phosphatase 1 (PP1, low-abundance gene, <300 copies/cell, 498 bp). Samples were run on a 6% acrylamide gel and stained using SYBR® Gold Nucleic Acid Gel Stain (Molecular Probes). M: molecular weight markers. 1: kidney EF-1a. 2: liver EF-1a. 3: kidney GAPDH. 4: liver GAPDH. 5: kidney PP1. 6: liver PP1. 7: liver EF-1a no RT control. 8: no RT template control.



**Figure 5. Expression Microarray of RNA From LCM Samples.** Mouse kidney sections were prepared using the HistoGene® kit and cells captured from the collecting ducts and glomeruli using the Arcturus® LCM System and CapSure® HS LCM Caps. RNA was isolated using the PicoPure® RNA Isolation Kit and amplified using the RiboAmp® RNA Amplification Kit. Amplified RNA was converted to Cy®5 labeled cDNA and hybridized onto separate microarrays composed of 3,000 mouse ESTs and scanned. Spot images were converted to pseudocolor and overlaid. Red spots show genes expressed in duct cells only, green spots glomeruli only, and yellow spots genes expressed in both structure types.

### ORDERING INFORMATION

Description	Size	Part Number
HistoGene® LCM Frozen Section Staining Kit	72 slides	KIT0401
HistoGene® Refill Kit includes dehydration chemicals and stain only	72 tissue preps	KIT0419
HistoGene® LCM Immunofluorescence Staining Kit	32 slides	KIT0420

For additional information on the HistoGene® kit and to place your order, visit [www.appliedbiosystems.com/arcturus](http://www.appliedbiosystems.com/arcturus).

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