



## Prepare Frozen Tissue for LCM While Maintaining High-quality RNA

### Simplify Tissue Staining and Dehydration

The HistoGene™ LCM Frozen Section Staining Kit 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. LCM Certified, the HistoGene Kit ensures consistent preparation of quality samples ready for laser capture.



### Provide Superior Staining while Preserving RNA

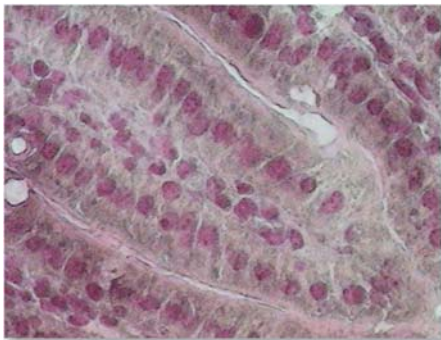
HistoGene Stain is a special solution developed by Arcturus to stain tissues for LCM subsequently used as sources of RNA. It is a fast penetrating stain that provides good contrast by differential staining of nuclei (purple) and cytoplasm (light pink).

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.

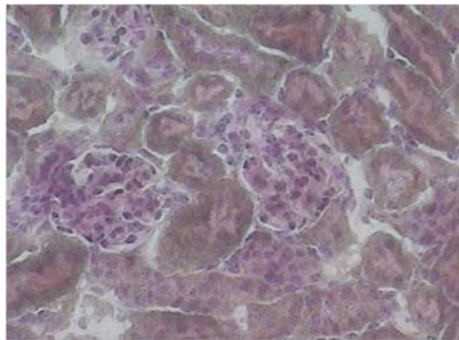
#### HistoGene Kit Components

- Detailed, validated protocol
- 100%, 95%, 75% Ethanol
- Xylene
- HistoGene staining solution
- Distilled Water - Nuclease Free
- Disposable slide staining jar
- HistoGene LCM slides

#### Examples of Tissues Prepared with the HistoGene Frozen Section Staining Kit



Mouse Small Intestine



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. 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.

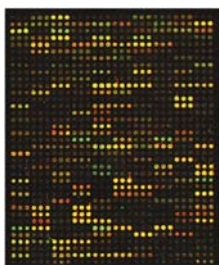
### Comparison of RNA isolated from intact tissue and HistoGene-prepared LCM samples

RNA samples were prepared from an intact frozen section (lane 2), cells captured from a section stained and dehydrated using the HistoGene Kit (lane 1), and cells captured from a section that was dehydrated but not stained (lane 3). Electrophoretic analysis of total cellular RNA isolated from mouse liver on an Agilent Bioanalyzer 2100. Note 185 and 285 bands of comparable intensity in both LCM samples and intact tissue.

## Use with Other Arcturus Products to Produce Superior Microarrays

The HistoGene LCM Frozen Section Staining Kit is one member of a growing family of products from Arcturus designed to seamlessly work together to produce high quality expression microarrays. Using the PicoPure™ RNA Isolation Kit, RNA is recovered with high yield in a minimal volume from as few as 10 cells. Nanogram quantities of RNA in

samples prepared using the Kit can be amplified to microgram amounts using the RiboAmp™ RNA Amplification Kit providing aRNA ready for labeling and hybridization to microarrays. When used in combination, Arcturus instruments and kits increase the reliability and reproducibility of gene expression studies performed on microarrays.



### Expression microarray of RNA from LCM samples using HistoGene, PicoPure and RiboAmp kits

Mouse kidney sections were prepared using the HistoGene Kit and cells captured from the collecting ducts and glomeruli using 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 Cy5 labeled cDNA and hybridized onto separate microarrays composed of 3000 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.

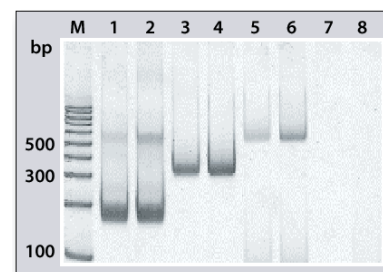
## Obtain High-quality RNA from Many Tissue Types

Arcturus has validated the HistoGene Kit by examining RNA integrity on an expanding

list of tissue types. All tissues tested to date using the HistoGene Kit have yielded quality RNA.

### Tissues Validated with the HistoGene Kit

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



### Detection of low-abundance mRNA in HistoGene samples

RT-PCR was performed on RNA from 500 cells captured from mouse liver and kidney. Equal quantities of cDNA were analyzed with three primer sets (Stratagene): Elongation Factor 1-a (EF-1a, high-abundance gene, ~3000 copies/cell, 187 bp), Glyceraldehyde-3-phosphate Dehydrogenase (GAPDH, medium-abundance gene, 300-3000 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. Lane 1: kidney EF-1a. Lane 2: liver EF-1a. Lane 3: kidney GAPDH. Lane 4: liver GAPDH. Lane 5: kidney PP1. Lane 6: liver PP1. Lane 7: liver EF-1a no RT control, Lane 8: no RT template control.

### Ordering Information

Catalog #	Description
KIT0401	HistoGene™ LCM Frozen Section Staining Kit, enough for 72 tissue sections
KIT0419	HistoGene™ Refill Kit, includes dehydration chemicals and stain only

### Related Product

Catalog #	Description
KIT0420	HistoGene™ LCM Immunofluorescence Staining Kit, 32 slides

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For laboratory use.



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