Extraction and Purification of High Quality RNA from many tissue types.

Agencourt® RNAdvance® Tissue System

Total RNA Extraction from Tissue

The Agencourt RNAdvance Tissue extraction technology, in combination with Beckman Coulter automation, offers researchers a true walk-away solution for consistent recovery of high quality total RNA in a multi-well format. Utilizing patented Agencourt SPRI® (Solid Phase Reversible Immobilization) technology, the Agencourt RNAdvance Tissue system can extract total RNA from a wide variety of tissues without the hazards and waste removal issues of organic solvents. Time and labor consuming steps of vacuum filtration and centrifugation-based procedures are eliminated. For most tissues, this extraction process produces higher recovery of total RNA than traditional column-based approaches.

Key Features:

- Extraction and purification of high quality RNA from many tissue types
- Efficient removal of genomic DNA and other contaminants
- No centrifugation or vacuum filtration required
- No organic extraction steps
- Supports automated, as well as manual, processing
- Ability to process from one to 96 samples on a Biomek® NX and NXP workstations with a Span-8 configuration

Higher Yield

Isolating total RNA using the Agencourt RNAdvance Tissue protocol results in consistently higher yields over alternate technologies without the necessity of centrifugation, vacuum filtration or organic solvents. Isolation of RNA from 10 mg of rat liver resulted in greater than two-fold increase in yield over RNeasy2 and greater than three-fold increase in yield over MagMax2 (Figure 1).

The ability to isolate RNA can vary greatly between tissue types due to many factors including differences in endogenous levels of RNases and the fibrous or lipid-rich nature of certain tissues. The Agencourt RNAdvance Tissue system has been shown to work well with a wide variety of tissue samples. Figure 2 shows the yield of RNA obtained from extraction of five different tissue types including fibrous and fatty tissues.

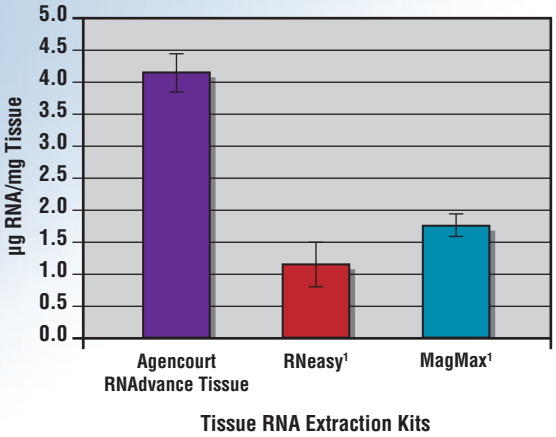


Figure 1. *The Agencourt RNAdvance Tissue and competitor kits were compared by extracting 10 mg of rat liver tissue in a multi-well format, N = 24 for each kit.*

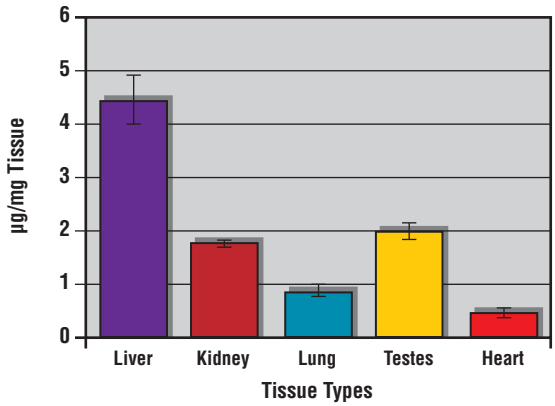
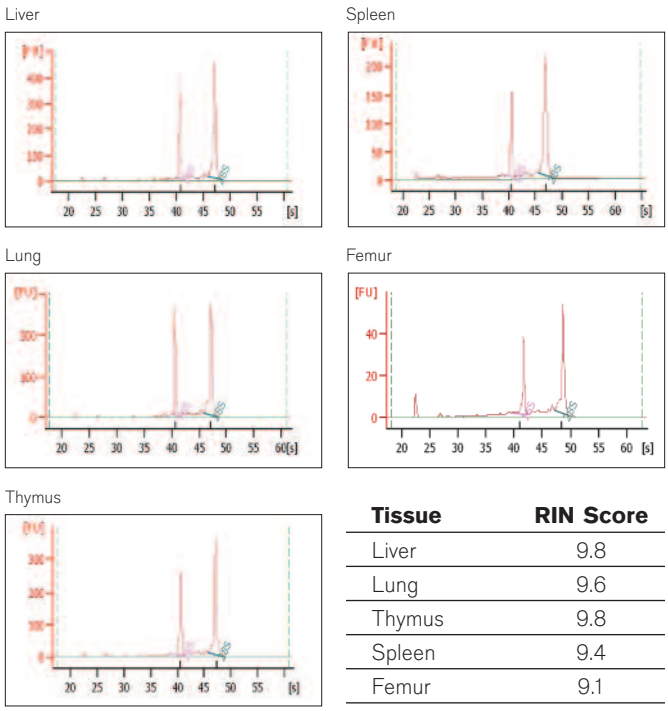


Figure 2. *RNA was extracted from several different rat tissues using the Agencourt RNAdvance Tissue system on a Biomek NX Span8. Yields are reported as µg/mg of tissue. N = 24 for liver tissue, N = 8 for all other tissues.*

Quality RNA Purification

RNA quality can readily be determined by electrophoresis on an Agilent2 Bioanalyzer 2100. Intact, high quality RNA will have well-defined 28 and 18s peaks with the absence of peak shoulders or an elevated baseline, which are both indicative of degradation. The Bioanalyzer software can calculate an RNA Integrity Number (RIN) based upon these and other qualities in the electropherogram thus providing a numerical assessment of RNA quality. The Agencourt RNAdvance Tissue process produces RNA with very high RIN scores as seen in Figure 3.



Tissue	RIN Score
Liver	9.8
Lung	9.6
Thymus	9.8
Spleen	9.4
Femur	9.1

Figure 3. *Agilent Bioanalyzer traces of RNA prepared from several tissues using the Agencourt RNAdvance Tissue system.*

No Genomic DNA

To test for the presence of genomic DNA contamination, total RNA obtained from the Agencourt RNAdvance Tissue protocol was split into two reactions: one with reverse transcriptase and one without. The resulting samples were then put through PCR1 for the beta actin gene. The absence of an amplification product in the -RT negative control (Figure 4, right) confirms that genomic DNA was not present in the total RNA and would indicate that the subsequent amplification in the +RT (Figure 4, left) samples was from cDNA only.

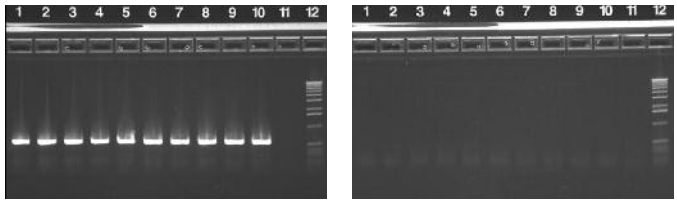
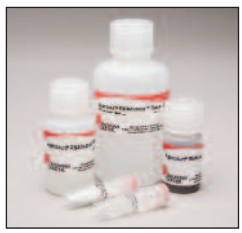


Figure 4. *Left gel image: lanes 1-10: RT positive reactions. Lane 11: no template control. Right gel image: lanes 1-10: RT negative reactions. Lane 11: no template control. (PCR: amplicon is a 400 bp region of the beta actin gene, 35 cycles).*

Kit Components

- Lysis Buffer
- Bind Buffer
- Wash Buffer
- Proteinase K
- Proteinase K Buffer



Ordering Information

For more information, please visit our website at **www.agencourt.com** or contact your local sales representative.

Product	Size	Product #
Agencourt RNAdvance Tissue Kit - Small	50 preps	A32645
Agencourt RNAdvance Tissue Kit - Medium	96 preps	A32649
Agencourt RNAdvance Tissue Kit - Large	384 preps	A32646
Agencourt RNAdvance Tissue Starter Kit - Tube	50 preps	A32648
Agencourt RNAdvance Tissue Starter Kit - Plate	50 preps	A32647

[1] The PCR process is covered by patents owned by Roche Molecular Systems, Inc., and F. Hoffman-La Roche, Ltd.

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