Xtra Pure RNA

Agencourt® RNAClean® XP System

Enzymatic Purification System

The Agencourt RNAClean XP kit provides a simple, flexible and highly reproducible method for purifying nucleic acid products generated in common enzymatic reactions such as cDNA synthesis and in vitro transcription (IVT) reactions. This method utilizes Solid Phase Reversible Immobilization (SPRI®) magnetic bead-based technology. It is uniquely formatted for purification of both the cDNA and cRNA steps in Eberwine[1] based procedures. This technique is easily performed manually in far less time than competitive methods. With the use of SPRI technology, the Agencourt RNAClean XP system doesn't use organic solvents, vacuum filtration, or centrifugation. The kit delivers superior nucleic acid recovery and purity for use in downstream microarray gene expression experiments.

Key Features:

- Purification of small and large nucleic acid products
- Complete removal of salts, unincorporated primers and dNTPs
- Simple automation-friendly protocol
- No centrifugation, filtration or precipitation steps required
- Elution in aqueous solution
- Purifies both cDNA and cRNA
- Scalable throughput

High Yield

The Agencourt RNAClean system consistently recovers more cRNA than standard column-based cleanup methods. The kit is effective in two methods for producing cRNA for microarray analysis, IVT and NuGEN[2] Amplification Technology. As shown in Figure 1, the Agencourt RNAClean XP kit produced a higher yield of RNA over the RNeasy[2] kit across both amplification methods.

Superior Quality

For microarray experiments, it is important that the cRNA cleanup method be free of contaminating nucleases and that it isolates the full range of in vitro transcribed products with no bias toward recovery of smaller or larger products. The Agencourt RNAClean XP kit is manufactured and tested to eliminate the introduction of RNase contaminants. Agilent Bioanalyzer traces of cRNA purified

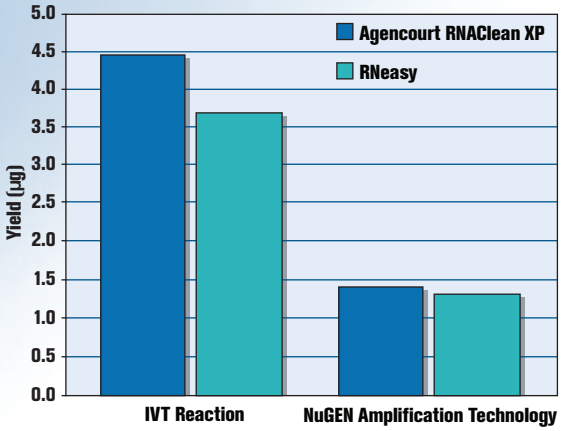

Figure 1. *In vitro transcribed cRNA products produced from the same biological sample were purified using the Agencourt RNAClean XP kit or the RNeasy column-based system. IVT target was PCR products that contained a T7 sequence on the forward primer. IVT was performed using an Ambion[2] MEGAscript[2] T7 Kit. NuGEN Target was total RNA from mouse liver extracted using the Agencourt RNAdvance Tissue kit. Amplification was performed using the NuGEN RNA amplification system V2. Samples were pooled and diluted prior to extractions. All samples eluted in 20 µL H2O. Chip analysis was performed using RNA Nano Chip on the Agilent[2] Bioanalyzer.*

using the Agencourt RNAClean XP process demonstrate that the full range of transcribed products is recovered. When comparing RNA purified using the Agencourt RNAClean XP chemistry versus the RNeasy chemistry, it can be seen that both methods produce a typical profile (Figure 2 and Figure 3), but the Agencourt RNAdvance XP process produces a higher concentration of RNA (Table 1).

Table 1 - Average RNA Concentrations

	Average RNA Concentration
Agencourt RNAClean XP - IVT	**575 ng/ L**
RNeasy - IVT	528 ng/ L
Agencourt RNAClean XP – NuGEN	**288 ng/ L**
RNeasy - NuGEN	267 ng/ L

Versatile and Economical

The Agencourt RNAClean XP kit is a fast and flexible solution for cleaning up enzymatic reactions. To accommodate various existing laboratory processes, the RNA purified using this chemistry can be run using a variety of IVT labeling kits (Table 2). Even without the use of organic solvents, centrifugation, or vacuum filtration, RNA is purified in around 20 minutes.

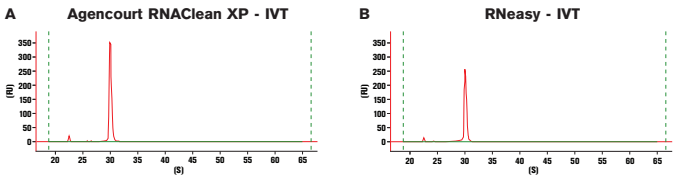

Figure 2. *In vitro transcribed cRNA products produced from the same biological sample were purified using the Agencourt RNAClean XP kit or the RNeasy column-based system. IVT target was PCR products that contained a T7 sequence on the forward primer. IVT was performed using an Ambion MEGAscript T7 Kit. Samples were pooled and diluted prior to extractions. All samples eluted in 20 µL H2O. Chip analysis was performed using RNA Nano Chip on the Agilent Bioanalyzer. A) cRNA purified using the Agencourt RNAClean XP system. B) cRNA purified using RNeasy columns.*

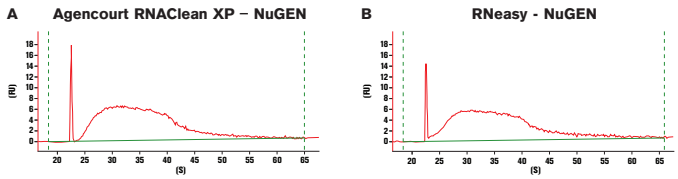

Figure 3. *In vitro transcribed cRNA products produced from the same biological sample were purified using the Agencourt RNAClean XP kit or the RNeasy column-based system. NuGEN Target was total RNA from mouse liver extracted using the Agencourt RNAdvance Tissue kit. Amplification was performed using the NuGEN RNA amplification system V2. Samples were pooled and diluted prior to extractions. All samples eluted in 20 µL H2O. Chip analysis was performed using RNA Nano Chip on the Bioanalyzer. A) cRNA purified using the Agencourt RNAClean XP system. B) cRNA purified using RNeasy columns.*

Table 2 - Number of reactions obtained using the Agencourt RNAClean XP reagent in a variety of IVT labeling kits

IVT Labeling Kit	Agencourt RNAClean XP Volume (µL)	Number of Reactions per 40 mL kit
NanoAmp[2] RT-IVT Labeling Kit	252	159
T7 labeling	342	117
Ovation[2] RNA Amplification System V2	288	139
TargetAmp[2] Nano-g[2] Biotin-aRNA Labeling Kit for the Illumina[2] System	72	556
TargetAmp 2-Round Biotin-aRNA Amplification Kit 3.0	216	185
Low RNA Input Linear Amplification Kit	180	222
Amino Allyl MessageAmp[2] II aRNA Amplification Kit	360	111
TotalPrep[2] RNA Amplification Kit	360	111
MessageAmp II	360	111
SuperScript[2] Indirect RNA Amplification System	342	117
BioArray[2] Single Round RNA Amplification and Biotin Labeling System	342	117

Kit Components

- Agencourt RNAClean Reagent

Ordering Information

For more information, please visit our website at **www.agencourt.com** or contact your local sales representative.
Beckman Coulter products including *Nucleic Acid Purification Reagents & Supplies* can also be found at **www.beckman.com/estore**

Product	Size	Product #
Agencourt RNAClean XP - 40 mL	116	A63987
Agencourt RNAClean XP - 450 mL	1463	A66513

Related Products	Product #
Agencourt SPRIPlate® 96R Magnet Plate	A29164
Agencourt SPRIPlate 384 Magnet Plate	A29165

[1] Phillips J., and Eberwine J.H. 1996. Antisense RNA Amplification: A Linear Amplification Method for Analyzing the mRNA Population from Single Living Cells. Methods 10: 283–288.
[2] All trademarks are property of their respective owners.

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