

Xtra Performance Post-PCR¹ Cleanup

Agencourt[®] AMPure[®] XP System PCR Purification System

The Agencourt AMPure XP kit is a highly efficient PCR purification system that delivers superior quality DNA with no salt carryover. The Agencourt AMPure method utilizes Solid Phase Reversible Immobilization (SPRI[®]) magnetic bead-based technology which requires no centrifugation or filtration. It can be easily used in manual and automated 96- and 384-well formats. Using a simple, three-step protocol, reaction contaminants are removed to improve downstream performance in applications such as sequencing and SNP genotyping.

Key Features:

- High recovery of amplicons, greater than 100 bp
- Efficient removal of unincorporated dNTPs, primers, primer dimers, salts and other contaminants
- Stable PCR products post-cleanup: No PCR degradation after storage at 4 °C for seven days
- Efficient recovery of double stranded and single stranded DNA templates
- Consistent recovery throughout the kit's 12 month shelf life
- Faster manual and automated processing as compared to traditional post-PCR cleanup methods
- Compatible with downstream applications:
 - PCR
 - Genotyping (SNP detection)
 - Fragment analysis
 - Sequencing (Sanger and Next Generation)
 - Cloning
 - Primer walking
- Automation-compatible method features:
 - Scalable throughput on three Beckman Coulter liquid handlers including Biomek[®] 3000, NX^P and FX^P automated laboratory workstations.
 - Quick startup menu
 - Deck setup walk-through menu
 - Method recovery
 - LIMS compatible

Genomics

Proteomics

Cell Analysis

Particle Characterization

Centrifugation

Lab Automation

Bioseparation

Lab Tools

High Recovery

Agencourt AMPure XP purification system recovers amplicons greater than 100 bp with consistency and high reproducibility. The recovery efficiency of the Agencourt AMPure XP kit for small and large amplicon sizes is superior to the traditional filtration PCR cleanup methods (Figure 1). The Agencourt AMPure XP kit purifies both single stranded and double stranded DNA with comparable recovery (Figure 2).

High Recovery with Agencourt AMPure XP Process

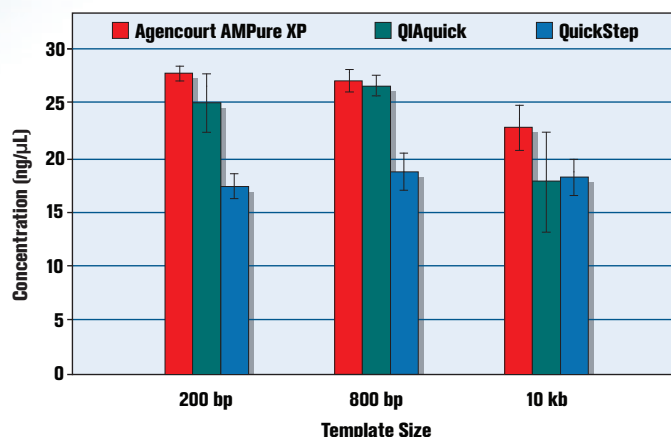


Figure 1. The recovery of the PCR products post-PCR cleanup was measured by spectrophotometry; 200 bp, 800 bp and 10 Kb PCR products where purified with the Agencourt AMPure XP kit, QIAquick² kit and QuickStep² filtration system.

Efficient Recovery of ds and ss DNA

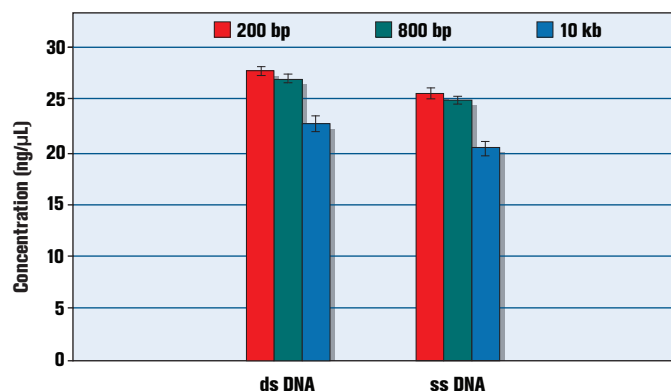


Figure 2. The recovery of the PCR products post-PCR cleanup was measured by spectrophotometry; 200 bp, 800 bp and 10 Kb double stranded and single stranded PCR products purified with the Agencourt AMPure XP kit.

Pure PCR Products

The Agencourt AMPure XP purification process binds PCR amplicons to para-magnetic particles and draws them out of solution, allowing contaminants such as primers, primer dimers (Figure 3), salts (Figure 4), and dNTPs to be easily rinsed away providing purified PCR product ideal for downstream genomics applications. Alternative post-PCR cleanup methods, such as ExoSAP-IT² and filtration, results in salt and primer dimer carryover, which may lead to failure in the downstream genomic application, thus increasing operational costs and decreasing process efficiency.

Stable PCR Products

The ability to store PCR products at 4° C after cleanup allows for flexibility in scheduling for genomic based processes. After seven days storage at 4° C, the PCR products purified using the Agencourt AMPure kit display no degradation, whereas traditional filtration and ExoSAP-IT display significant degradation (Figure 5.)

Fast Post-PCR cleanup

The Agencourt AMPure XP post-cleanup process is faster than QIAquick, QuickStep and ExoSAP-IT (Figure 6). This provides the end user with the flexibility to schedule activities in the lab and/or on the different Biomek® platforms, increasing operational efficiency.

No Primer Dimers with Agencourt AMPure XP Kit

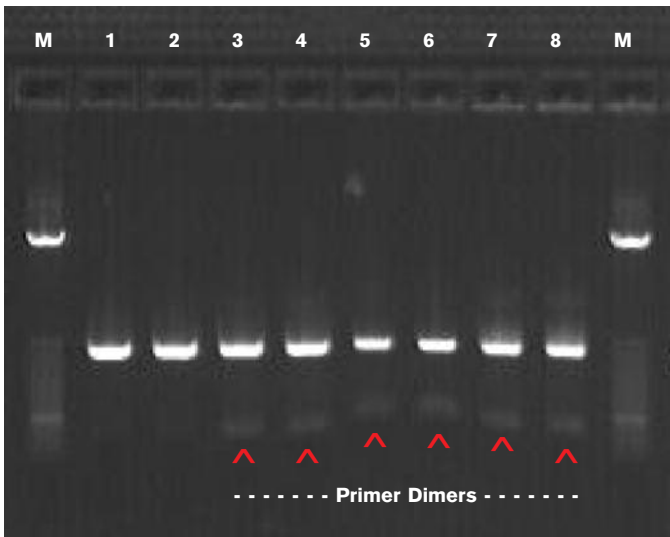


Figure 3. DNA fragments with a length of 400 bp were amplified by PCR and then purified with Agencourt AMPure XP kit (lanes 1 and 2), QIAquick (lanes 3 and 4), QuickStep (lanes 5 and 6) and ExoSAP-IT (lanes 7 and 8). The post-cleanup products were loaded (3 µL) on a 1.2% agarose gel separated by electrophoresis with a 25 bp ladder as a marker (M).

No Salt Carryover with Agencourt AMPure XP Kit

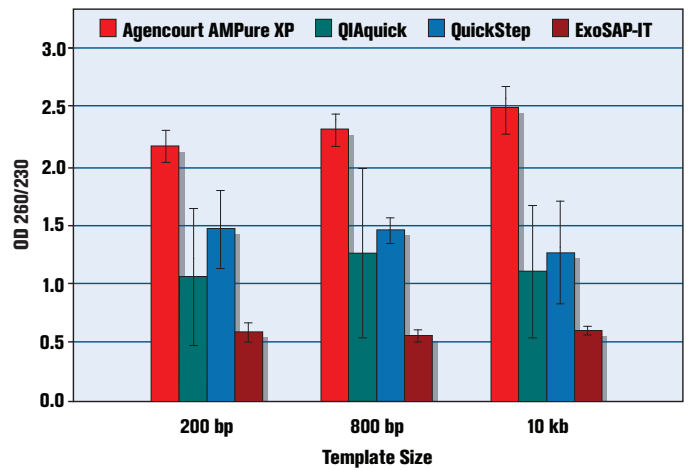


Figure 4. The recovery of the PCR products post-PCR cleanup was measured by spectrophotometry; 200 bp, 800 bp and 10 Kb PCR products were purified with the Agencourt AMPure XP kit, QIAquick kit and QuickStep filtration system. The highest 260/230 reading is observed with Agencourt AMPure XP kit which is an indication of the efficient removal of salt from PCR products.

Stable PCR Products

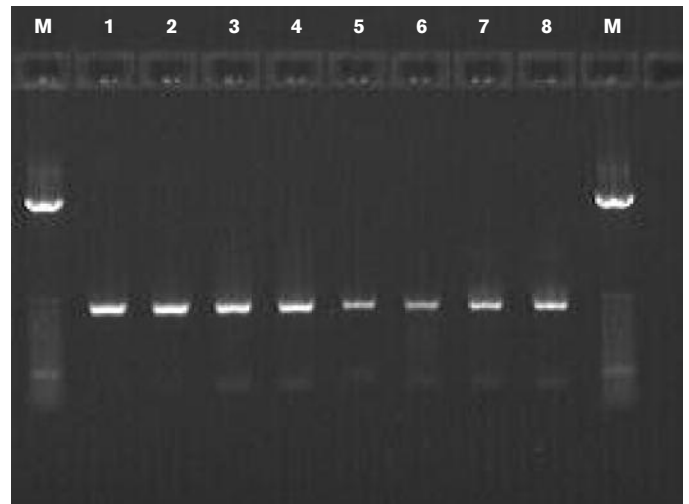


Figure 5. DNA fragments with a length of 400 bp were amplified by PCR and then purified with the Agencourt AMPure XP kit (lanes 1 and 2), QIAquick (lanes 3 and 4), QuickStep (lanes 5 and 6) and ExoSAP-IT (lanes 7 and 8). Post-cleanup the PCR product was stored for seven days at 4° C, then loaded (2 µL) on a 1.2% agarose gel separated by electrophoresis with a 25 bp ladder as a marker (M).

Fast Post-PCR Cleanup

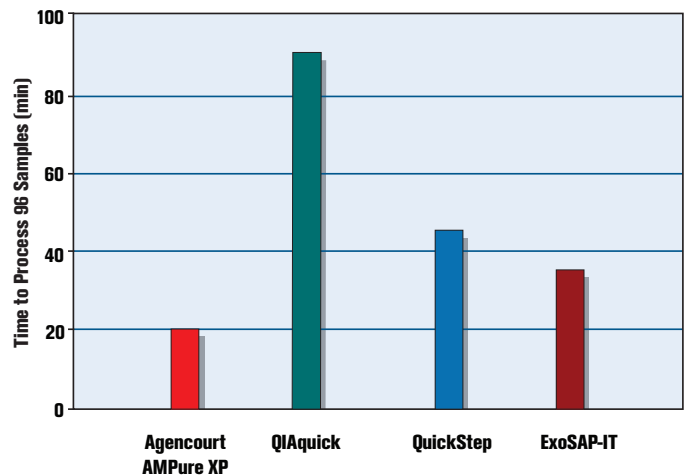


Figure 6. The processing time for one 96-well plate including setup was compared among all kits. Agencourt AMPure XP processing time was the fastest among the ExoSAP-IT, QuickStep and QIAquick kits.

Walk-away Automated Solution

Agencourt AMPure XP post-PCR cleanup has been automated on three Beckman Coulter liquid handlers, the Biomek® 3000, NX^P and FX^P for processing scalability (Table 1). The LIMS compatible automation functionality is aided by a user-friendly interface equipped with a quick startup menu, a deck setup walk-through menu, a method recovery menu, and a procedure menu.

Table 1 - Throughput

Final Transfer	Number of Plates	Agencourt AMPure XP Kit (min)
Yes	1	18
Yes	2	23
Yes	3	30
Yes	4	37
No	1	14
No	2	19
No	3	25
No	4	31
No	5	38
No	6	45
No	7	52
No	8	58

User-Friendly Quick Startup Menu



Method Recovery Functionality



Easy Setup



Procedure Menu

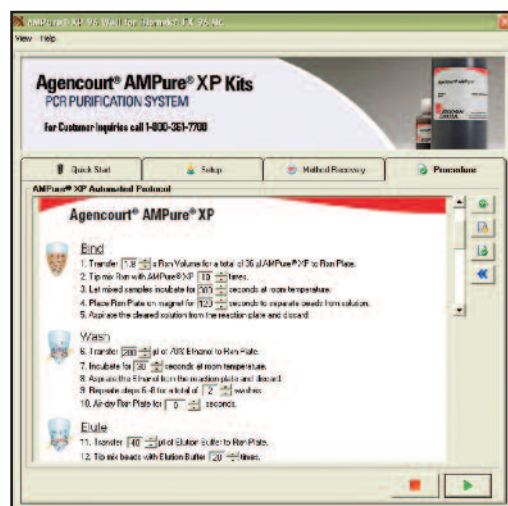


Figure 7. User-friendly interface for intuitive method control.

Kit Components

- Agencourt AMPure XP 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 AMPure XP Kit - 5.0 mL	139/278	A63880
Agencourt AMPure XP Kit - 60.0 mL	1666/3333	A63881
Agencourt AMPure XP Kit - 450.0 mL	12500/25000	A63882

Related Products

	Product #
Software - Agencourt AMPure XP 96 MC - v3.x	A79794
Software - Agencourt AMPure XP 384 MC - v3.x	A79795

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

² All trademarks are property of their respective owners.

* Typical reaction volume is 10–20 μ L for the 96-well microplate and 5–10 μ L for the 384-well microplate. Number of preps based on 10 μ L reaction volume.

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