CELEMICS PRODUCT SHEET

CeleMag™ Clean-up Bead

Celemics' Innovative High Purification Efficiency

Key Features

- Market-leading purification and size selection efficiency
- Unique magnetic bead-based chemistry
- Consistent size selection with flexibility
- Proven performance with significant cost savings
- Compatible with all Celemics' panels as well as other NGS providers

CELEMICS

For Research Use Only

Not for use in diagnostic procedures

CeleMag™ Clean-up Bead

The process of DNA clean-up is a mandatory step for Next Generation Sequencing (NGS). In order to streamline the entire NGS workflow without risking the loss of crucial genomic data, CeleMag™ Clean-up Bead has specifically been optimized to meet the stringent requirements for NGS procedure.

CeleMag™ Clean-up Beads utilize unique magnetic bead-based chemistry to enable a simple, flexible, and easily reproducible workflow for the purification and size selection of nucleic acids. It is synthesized to provide market leading purification and size selection efficiency. Not only it is highly optimized to be used with all Celemics' target enrichment kits, but CeleMag™ Clean-up Bead will also demonstrate strong compatibility with NGS kits from other providers due to Celemics' exclusive technology to stabilize the buffer and bead conditions. Our branded CeleMag™ Clean-up Bead will allow flexible size selection options with remarkable consistency, proven to be the most optimized bead for NGS.

Process for Clean-up

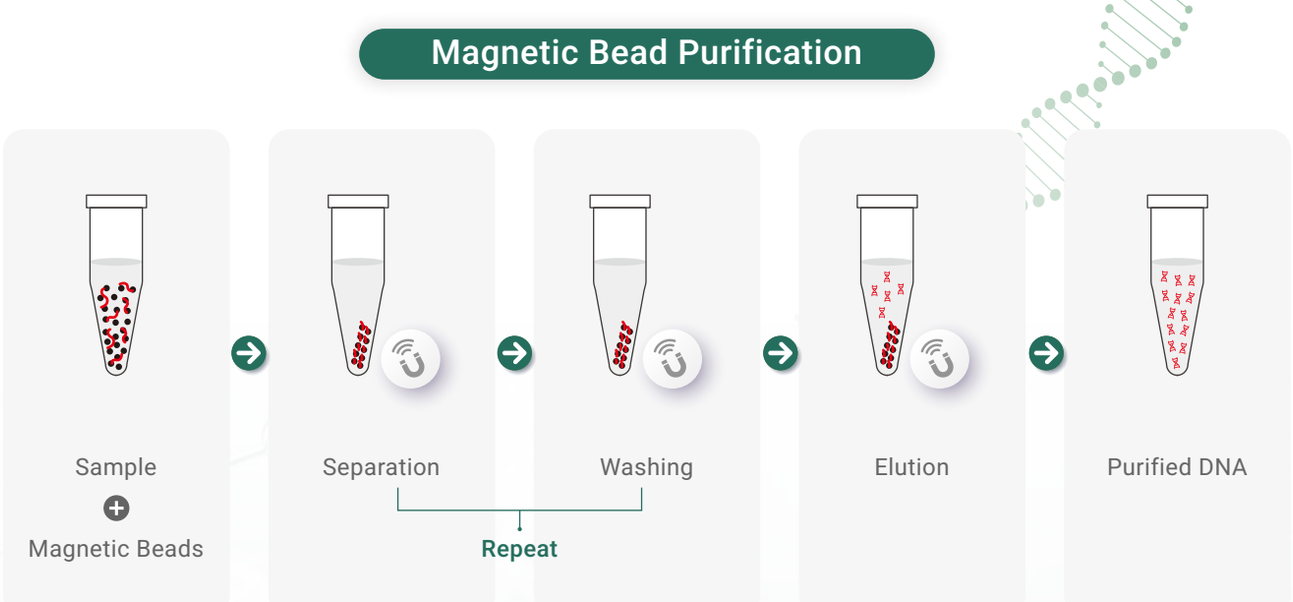

Figure 1. Process for purification using CeleMag™ Clean-up Bead. Sample (fragmented DNA) is mixed and bound to magnetic bead. Fragments bound to magnetic bead will then be washed for repeated times and the final product of selected size will be eluted for the next step.

Performance Data

Total DNA Recovery

Celemics' exclusive magnetic bead and buffer conditioning technologies ensure CeleMag™ Clean-up Bead to maximize the DNA recovery after purification with easy-to-follow protocols.

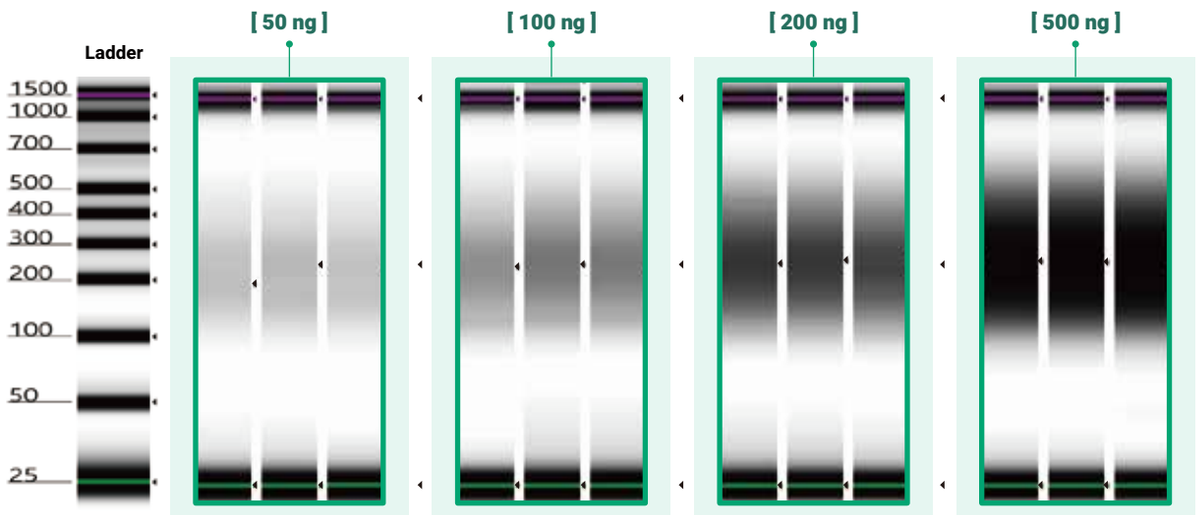

Figure 2: Purification and recovery rate with respect to changes in input DNA amount. The amount of DNA input for each group was loaded with sample amount of 50, 100, 200 and 500 ng, respectively. The sample to bead mixture ratio was set to 50 µL to 90 µL for all groups. For samples loaded with input amount of 100 ng and above, the recovery rates were higher than 99%, maximizing the DNA recovery.

Total DNA Recovery : Celemics vs. Bead AP

DNA recovery rate and reproducibility of CeleMag™ Clean-up Bead were compared with one of our competitors' product.

	Input 500 ng	Total (ng)	Yield(%)	Average Yield
CELEMICS	Replicate 1	473.6	94.7%	86.5%
	Replicate 2	416.0	83.2%	
	Replicate 3	438.4	87.7%	
	Replicate 4	416.0	83.2%	
	Replicate 5	419.2	83.8%	

	Input 500 ng	Total (ng)	Yield(%)	Average Yield
Bead AP	Replicate 1	387.2	77.4%	75.8%
	Replicate 2	368.0	73.6%	
	Replicate 3	364.8	73.0%	
	Replicate 4	377.6	75.5%	
	Replicate 5	396.8	79.4%	

Table 1: Comparison of total DNA recovery rate between Celemics' CeleMag™ Clean-up Bead and Competitor's Bead AP. 500 ng of DNA was purified using bead from both parties. Of the replicated 5 samples, the overall average of recovered rate of CeleMag™ Clean-up Bead was higher (average of 86.5%) than those of purified with Bead AP (average 75.8%)

DNA Size Selection

CeleMag™ Clean-up Bead allows selective isolation of desired fragments depending on the sample-to-bead ratio. This effective and efficient selection and purification will ensure high recovery rate of both DNA and RNA for your NGS workflow.

Experiment Condition										
Sample to Bead Ratio	1.8x	1.5x	1.2x	1.1x	1.0x	0.9x	0.8x	0.7x	0.6x	0.5x

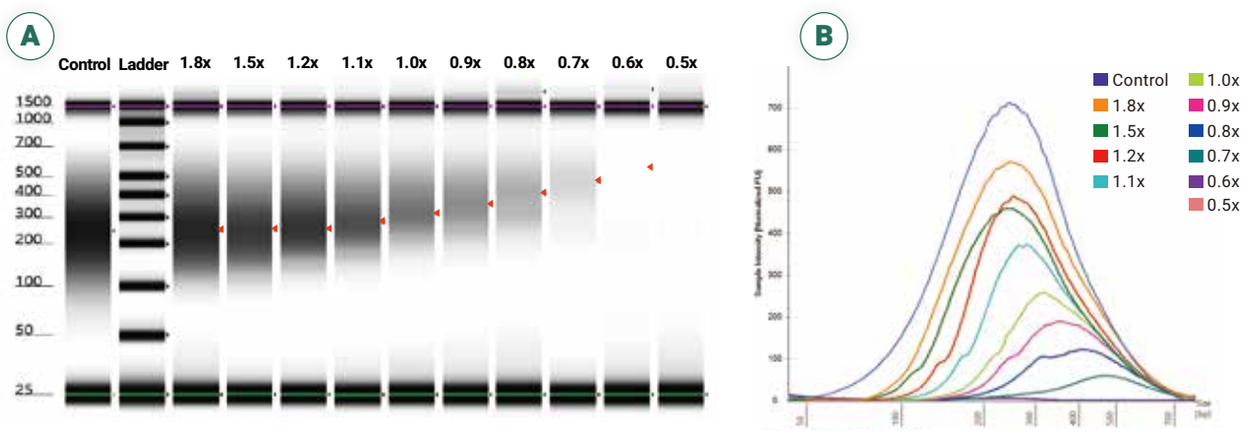

Figure 3. Fragmented DNA size selection with respect to changes in amount of bead. The amount of sample loaded was 50µL and was analyzed on Agilent's TapeStation® 4200. The result showed gradual increase in selected band (marked with orange arrow) as the sample to bead ratio decreased.

Size Selection Comparison: Celemics vs. Bead AP

CeleMag™ Clean-up Beads purification capacity was compared with one of our competitors' product by changing the sample to bead ratio.

Experiment Condition							
Sample to Bead Ratio	1.8x	1.5x	1.2x	1.1x	1.0x	0.9x	0.8x

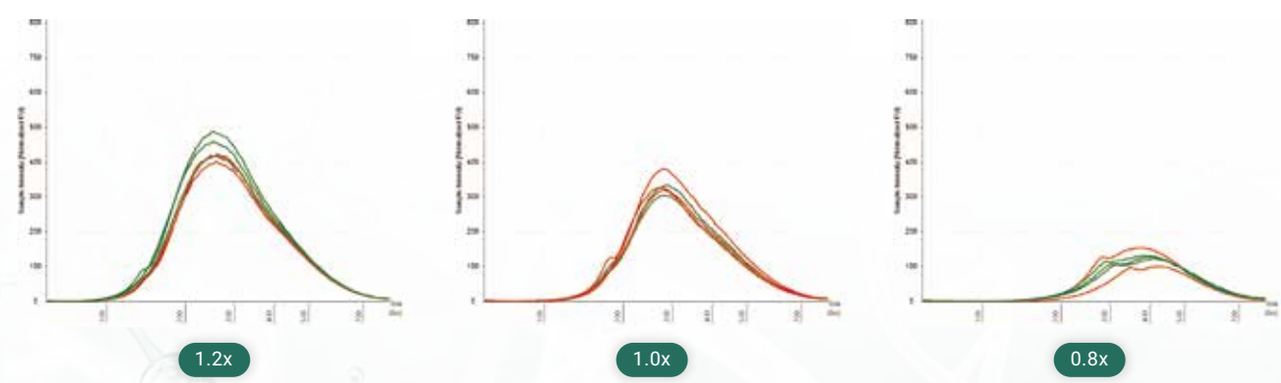

Figure 4: Examples of Size selection comparison between CeleMag™ Clean-up Bead and Bead AP. The size selection result was compared using Celemics' CeleMag™ Clean-up Bead (Green) and Bead AP (Red). The sample (loaded 50µL throughout) to bead ratios were altered for thorough comparison and were analyzed on TapeStation® 4200. The selected sizes with CeleMag™ Clean-up Bead were comparable, if not superior, to Bead AP.

DNA Double-sided Bead Clean-up

CeleMag™ Clean-up Bead can also be used for double-sided clean-up to remove both very small and very large fragments for your NGS libraries. The provided data demonstrates effective double-sided selection results using CeleMag™ Clean-up Bead, depending on the library to bead ratio. Celemics' clean-up bead can provide flexibility to choose the desired fragment sizes that you wish to isolate.

Experiment Condition					
	Range 1	Range 2	Range 3	Range 4	Range 5
1st Selection Sample : Beads (μL)	100 : 90	100 : 80	100 : 70	100 : 60	100 : 55
2nd Selection Sample : Beads (μL)	190 : 20	180 : 20	170 : 20	160 : 20	155 : 15

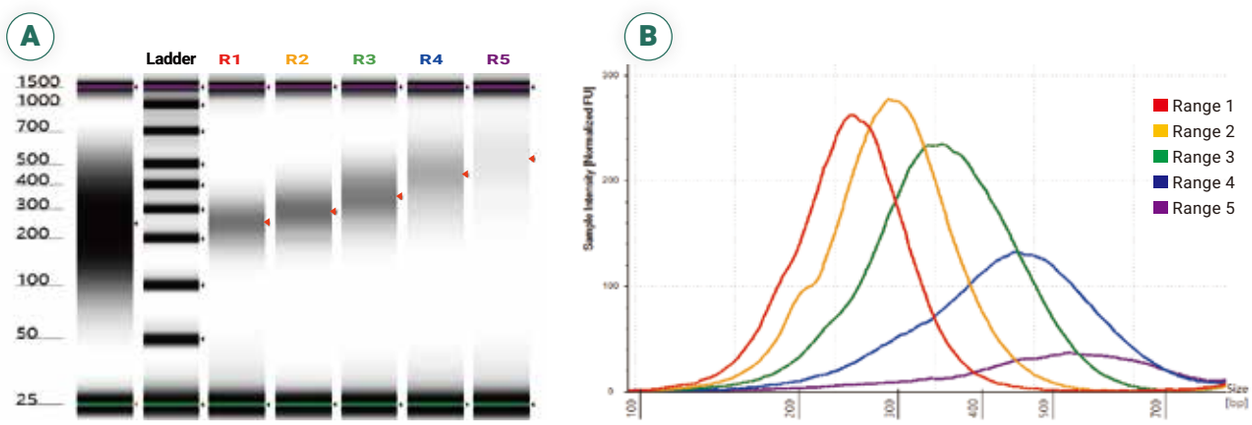

Figure 3: Double-sided bead clean-up using CeleMag™ Clean-up Bead. The double-sided clean-up using CeleMag™ Clean-up Bead by changing the sample to bead ratios for both first and second selection to illustrate robust clean-up and size selection capacity.

DNA Double-sided Clean-up Comparison: Celemics vs. Bead AP

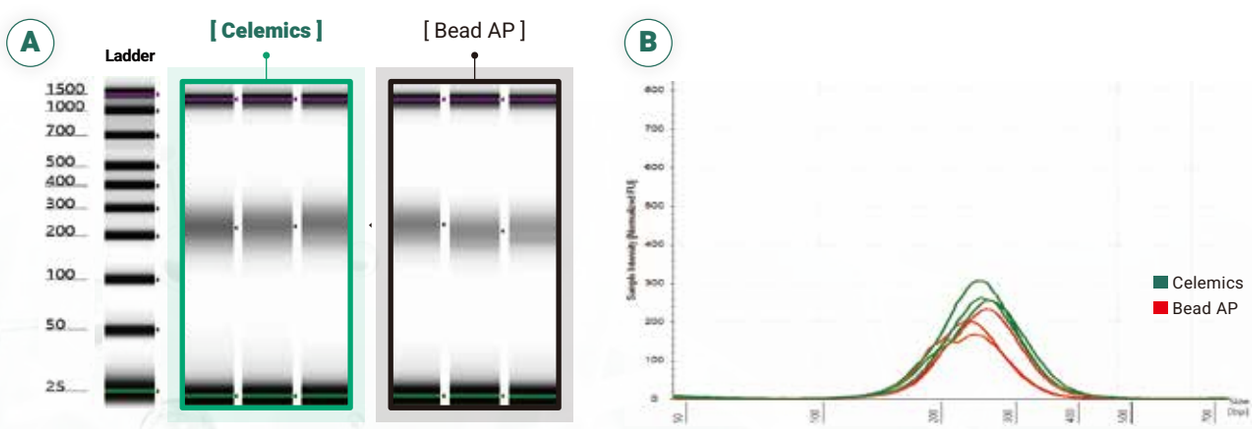

Figure 4: Comparison result of double-sided clean-up between CeleMag™ Clean-up Bead (Green) and Bead AP (Red). First clean-up ratio of sample to beads was 100 μL : 90 μL and second clean-up ratio of sample to beads were 190 μL : 20 μL for both products. The results were comparable to one another, demonstrating effective and easy purification of CeleMag™ Clean-up Bead for isolating desired fragments.

Order Information | CeleMag™ Clean-up Bead

Cat. No.	Product	Product Unit
CMCB-M-050	CeleMag™ Clean-up Bead	5 mL
CMCB-M-500	CeleMag™ Clean-up Bead	50 mL

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