BECKMAN COULTER
Life Sciences

EMnetik PCR Cleanup System

PCR Cleanup - Simplified

Bring your PCR cleanup into the 21st century.

Monotonous, time-consuming column cleanup has been around since 1991—so a change is long overdue. **And now it's here.** When you replace your typical column cleanup steps with the benchtop EMnetik System, you'll spend half the time on PCR cleanup, which means you'll have more time for the **important** activities in your lab.

Benefits of the EMnetik System:

- ~2x faster turnaround time compared to column cleanups (16 min vs 30 min)
- >80% recovery (comparable to column cleanup kits)
- Significantly fewer touchpoints (< 50 touchpoints compared to 300 for columns)
- No need to handle small columns or use a single-channel pipette
- Move samples from a thermocycler to the EMnetik 24 microparticle processor, and don't move them again until final elution
- Intuitive user interface removes guesswork by providing clear, step-by-step instructions
- Column-based cleanups are officially history.

The EMnetik System is the future of simplified PCR cleanup.

Figure 1: Comparison of EMnetik PCR System workflow compared to column workflow. The top row shows how The EMnetik System alleviates some common column pain points. 1 and 2: don't worry about not being able to read a smeared sample number or confusing 6s and 9s. Using the EMnetik System your samples can stay in a 24-well format or the format you used for your PCR or enzymatic reaction. You can save your sample names, however, in a way that is best for you, and not written in ink on a column that can easily smudge. 3: Move samples directly from your thermocycler to the EMnetik 24 microparticle processor. You have less chance of dropping them, and you won't have to move them again. 4: Instead of using a single channel pipette you can use a multi-channel pipette and pipette into 24 samples much faster. 5: Don't move around the lab from your bench to the closest centrifuge; complete it all in one spot with the EMnetik 24 microparticle processor and its user-friendly interface.

Comparable yield to column cleanup kits, while maintaining DNA integrity

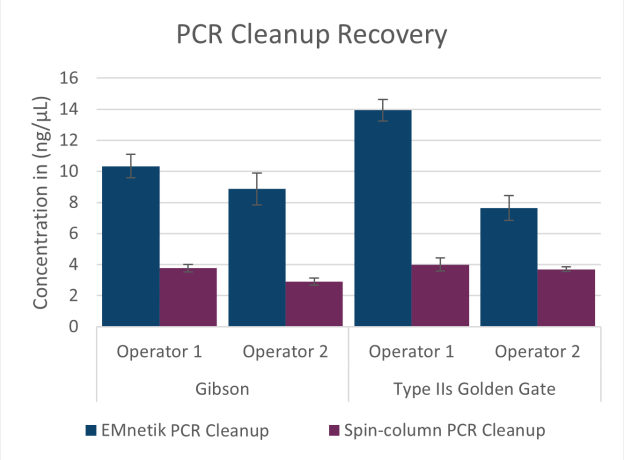


Figure 2: The concentration of DNA recovered using either a EMnetik PCR cleanup kit or a spin-column cleanup kit. The DNA recovered were from either a Gibson assembly or a Type IIs Golden Gate assembly. The EMnetik PCR cleanup kit on average had better yield than the spin-column cleanup kit for these two users. The bars are an average of three cleanups and the error bars are the standard deviation of those cleanups.

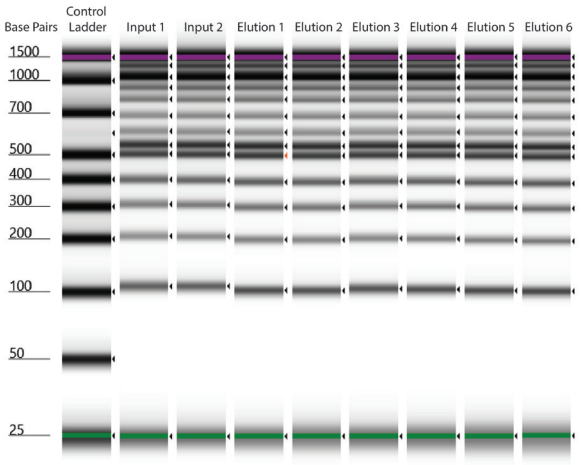


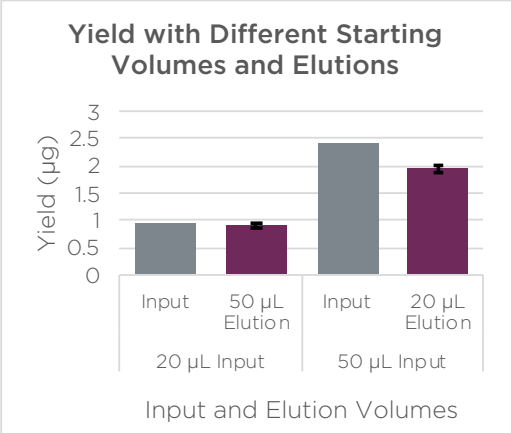
Figure 3: To test that DNA was not degraded during the automatic bead mixing or separation, NEB 100bp DNA ladder (PN: N3231L) was used as input. The lanes with input 1 and 2 show the input ladder and the lanes with elution 1 – 6 show the ladder after cleanup. All bands can be seen in all lanes, indicating that DNA is not degraded during the cleanup process.

"We were most surprised with EMnetik's System's robustness. The device moved the beads to the side making it so easy to aspirate."
- Joshua James, Ph.D. Student

"I did prefer the EMnetik System because of its simplicity and efficiency, despite being more familiar with column based protocols."
– User 2 at MRI Global

"The EMnetik device is nice because the protocol is right there in front of the user on the screen that has stepby-step instructions and videos for extra explanations."
– User 1 from MRI Global

With the EMnetik System you can choose your sample input and elution and labware.



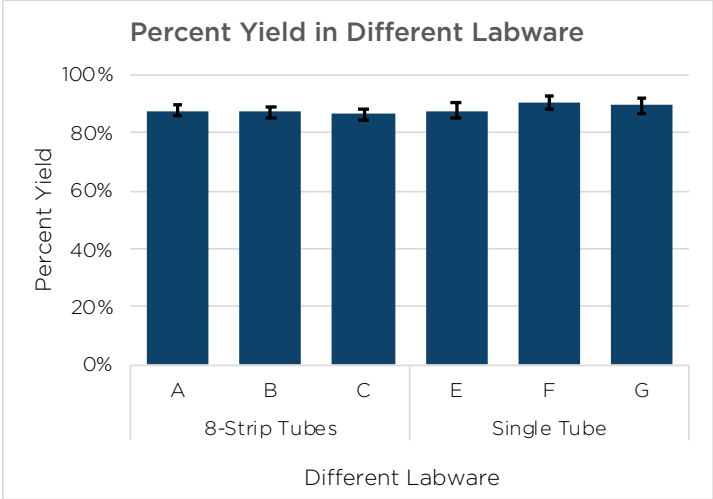


Figure 4: The graphs above show the flexible options for users. The left graph shows the yield of elutions from 2 different starting inputs and 2 different elution volumes. The purple bars are the average of 9 replicates on the device, and the error bars are the standard deviation of the replicates. Showing that elution at 50 µL and 20 µL are both options for the user. The right graph shows that the yield does not vary widely when using different labware. The first three bars show the yield when using PCR 8-strip tubes, and the second three bars show the yield when using single PCR tubes. The bars are the average of 8 samples and the error bars are the standard deviation of the 8 samples. Tubes used were as follows: A;Thermo Scientific AB-2005, B: VWR 93001-118, C: VWR 20170-002, E: Thermo Scientific AB-0337, F: VWR 20170-010, and G: VWR 20170-012.

EMnetik 24 Workflow: ~2x Faster Compared to Column Cleanups

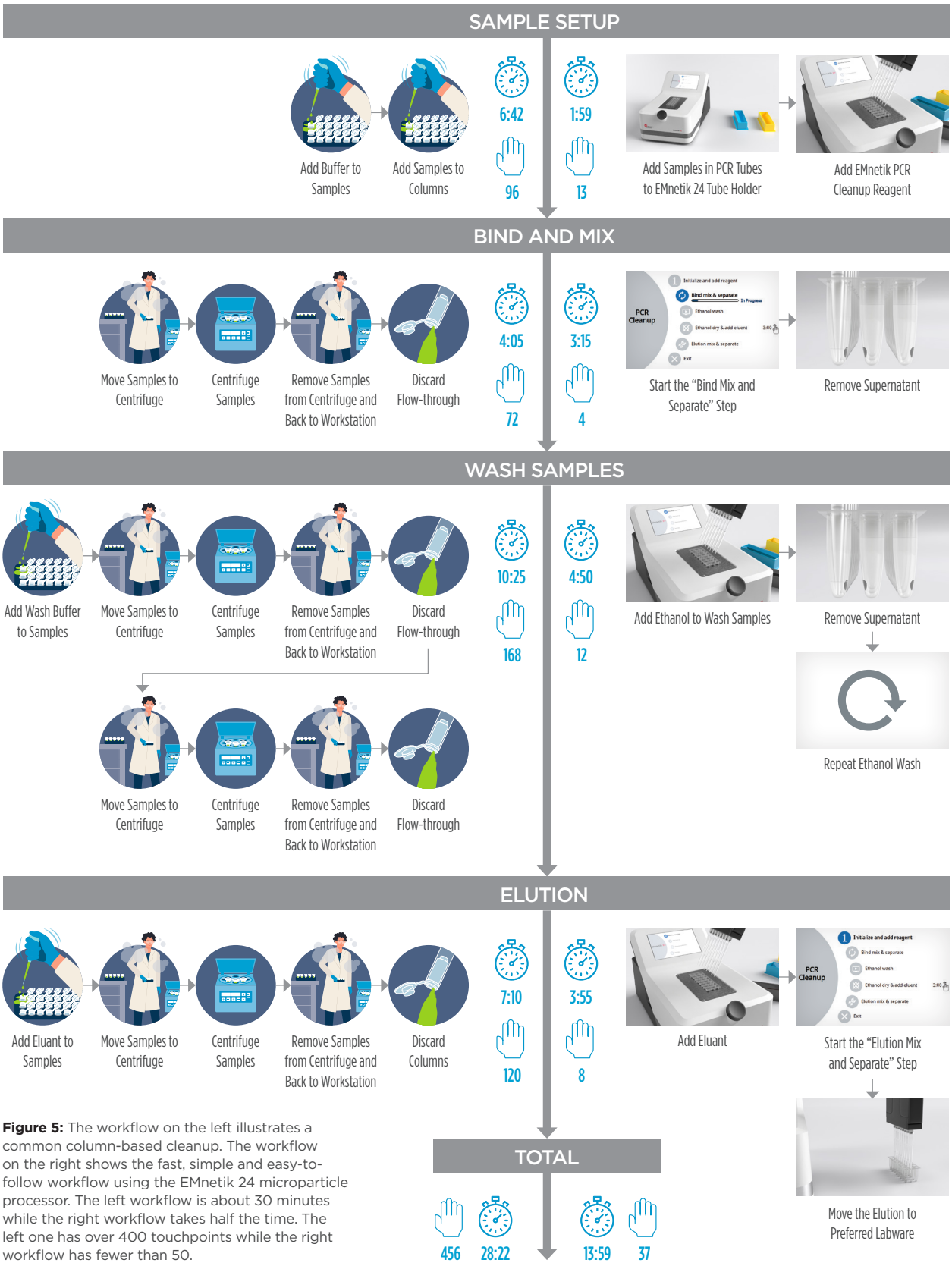


Figure 5: The workflow on the left illustrates a common column-based cleanup. The workflow on the right shows the fast, simple and easy-to-follow workflow using the EMnetik 24 microparticle processor. The left workflow is about 30 minutes while the right workflow takes half the time. The left one has over 400 touchpoints while the right workflow has fewer than 50.

Automatic Magnetic Bead Mixing and Separating

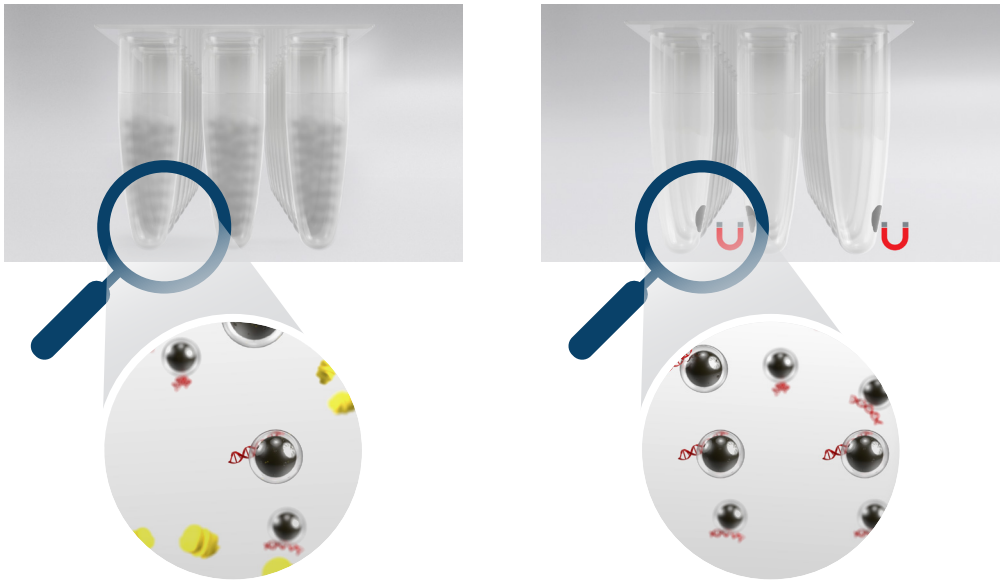


Figure 6: The above is a look inside the EMnetik 24 microparticle processor and the EMnetik PCR Cleanup kit. On the left is a photo illustrating the automatic mixing of the reagent with your sample. The EMnetik 24 microparticle processor uses electromagnets to mix your sample without your having to pipette mix. The second picture is an illustration of the highly responsive magnetic beads binding to only the DNA in your sample. Once the beads have been mixed with your sample the EMnetik 24 microparticle processor then uses a magnet to pull the samples to the sides of the tubes so you can remove contaminants in the supernatant, which leaves only your sample bound to the magnetic beads. The DNA can be eluted off in water.

PART NO	NAME	NUMBER OF PREPS
C55784	EMnetik 24 Microparticle Processor	—
C68442	EMnetik PCR Cleanup Kit	500 (50 µL preps)
C79155	One Year Extended Warranty	—

Not intended or validated for use in the diagnosis of disease or other conditions.

For Beckman Coulter's worldwide office locations and phone numbers, please visit Contact Us at beckman.com

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