



# Transfection

Efficient, high-quality results with automated transfection methods

The introduction of exogenous nucleic acids into cells is an essential means of studying cell biology. Transient transfections can be used for screening the effects of overexpression (plasmid) or knockdown (siRNA) of genes as well as non-coding nucleic acids (miRNA mimics or inhibitors). Transfection is critical for cell line development, antibody production and protein expression models. By selecting for expression clones that have incorporated the construct of interest and a selection marker, stable lines can be generated for long-term studies or as reporter lines for screens.

Whether using lipids, calcium phosphate, or electroporation, the Biomek platform can perform your transfection workflow. Automation of the optimization of transfection conditions through factorial design approach can reduce toxicity and improve efficiency while saving laborious hours at the bench. Automating clone selection for stable lines through the use of integrated devices, the Biomek platform manages your workflow needs keeping your cells intact and protects against sample contamination through the HEPA enclosure and sterile Biomek tips.

## Typical Transfection Workflow for Stable Cell Lines

While there are many approaches for transfecting cells, below is an example workflow of which each step can be automated to enable a walk away solution in the laboratory.



## Solutions That Meet Your Needs

Minimize the labor intensive, bottleneck in your lab through automation. As your throughput increases, the Biomek automated cell culture solutions enable you to obtain results you can trace and rely on in an efficient manner, while optimizing your workflows and reducing your time at the bench.

Transform your Biomek liquid handler into a complete workflow solution that will optimize the efficiency, consistency, and reliability of your lab's operations. From simple on-deck devices to complete robotic systems, we can develop focused, yet flexible, Biomek-based solutions by integrating Beckman Coulter and third-party instruments.

**Figure 1.** The i5 Multi-channel or i5 Span 8 platform with HEPA enclosure solutions to automate laborious transfection processes that require highly repeatable results.





**Figure 2.** Scale to your automation needs. The Biomek i-Series is an open, flexible platform that enables integration of components to meet your laboratory's workflow needs. Gain time back and confidence in your transfection results for downstream assays with a fully automated solution.

### Biomek Software: Workflow Intelligence at Every Step

Every time your sample moves, data moves. Cell culture workflows are typically performed over the course of several weeks to months at a time. The Biomek Software Suite ensures data integrity to provide peace of mind and schedules activities to streamline automated workflows.

At the heart of every Biomek is the software. Biomek software provides users with the confidence to know their samples are being treated consistently every run, and with every liquid transfer, the data from your samples is being stored. The intuitive, drag and drop user interface makes setting up and maintaining your workflows easy. To meet the evolving needs of cellular workflows, we also offer:

- **SAMI EX:** provides complete automation and process control by creating planned schedules with the benefits of an optimized, predictable static schedule
- **DART (Data Acquisition and Reporting Tool):** gathers data and synthesizes runtime information from Biomek log files to capture each manipulation of the sample during the course of the method
- **SAMI Process Management Software (SPMS):** is a calendar organizational tool that allows the addition, monitoring, and planning of SAMI EX methods and other events as part of user-defined processes
- **PowerPack:** features advanced tools to make programming data-intensive methods easy