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FAST FORWARD

Accelerating CRISPR Research with Automated, High-content Screening (HCS)

Why just keep your finger on the pulse of genome editing when you could also be keeping your thumb on the HCS fast-forward button? New platforms are emerging that can make quick work of your genotypic and phenotypic screening workflows, from CRISPR targeting efficiency analysis and 3D cell culture, to integrated live-cell analysis. Learn how to research more and pipette less with automated, high-throughput phenotypic screening.

THE MANUAL METHOD [BEFORE AUTOMATION/HCS]

VS

AUTOMATED, HIGH-THROUGHPUT PHENOTYPIC SCREENING [AFTER AUTOMATION/HCS]

DESIGN YOUR CRISPR EDITING STRATEGY



The length of this step depends on the quality of your sequencing data and the complexity of your target.



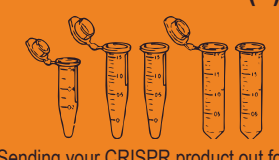
EXECUTE YOUR CRISPR EDITING STRATEGY



Manual pipetting is time-consuming, and prone to liquid-dispense variability.



CONFIRM YOUR CRISPR EDIT(S)



Sending your CRISPR product out for sequencing could add days to your workflow. Alternatively, you could move forward with unconfirmed edits, potentially adding significantly to your downstream screen times.



GROW, FEED, AND MAINTAIN YOUR CELLS



Manual cell culture is time intensive and variable.



IMAGE YOUR CELLS: ONE WELL AT A TIME

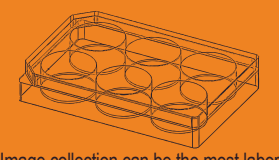
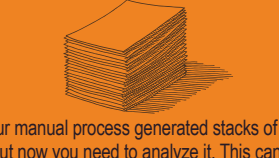


Image collection can be the most labor-intensive step of your CRISPR workflow, particularly if you took a shortcut and failed to confirm your edits.



ANALYZE AND INTERPRET YOUR DATA



Your manual process generated stacks of data, but now you need to analyze it. This can be less daunting and time-consuming with good analysis software and sufficient computing power.

GENOME EDITING

DESIGN YOUR CRISPR EDITING STRATEGY



With the right program, this step can take under 2 minutes.



EXECUTE YOUR CRISPR EDITING STRATEGY



Automated liquid handling increases efficiency, reduces manual intervention, and ensures precise reaction volumes, every time.



CONFIRM YOUR CRISPR EDIT(S)



Capillary electrophoresis enables rapid QC of your CRISPR products.



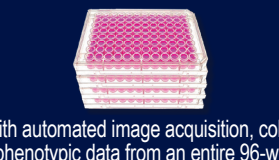
SET UP AND MAINTAIN YOUR 3D CELL CULTURE WITH AUTOMATED LIQUID HANDLING



3D cultures more closely recapitulate in vivo conditions, allowing deeper analysis of cell-cell interactions.



IMAGE YOUR CELLS: PLATES AT A TIME



With automated image acquisition, collect phenotypic data from an entire 96-well plate without human interaction, or add a plate handler to collect data from many plates in an automated way.



INTERPRET YOUR DATA



Advanced HCS platforms enable you to collect, analyze, and interpret phenotypic data with just a few clicks – saving time and hands-on work.

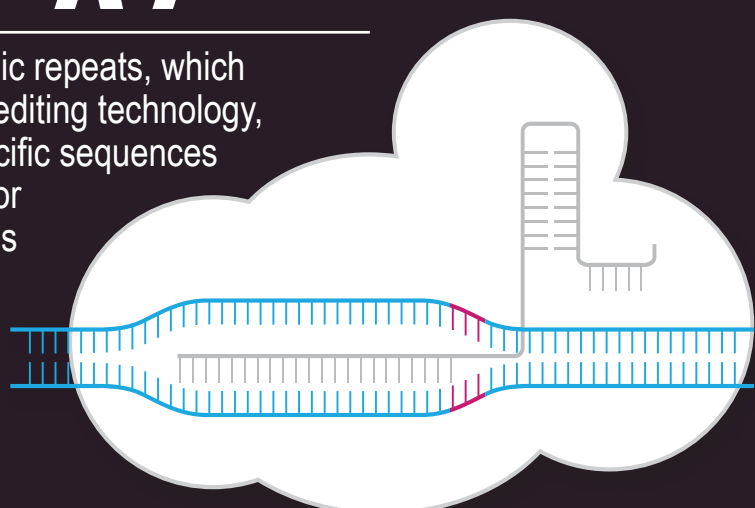
CELL CULTURE

PHENOTYPIC ANALYSIS

NEW TO CRISPR?

CRISPR stands for clustered, regularly interspaced, short palindromic repeats, which were first discovered as an immune function in archaea. As a gene-editing technology, CRISPR relies on Cas proteins with nuclease activity to identify specific sequences in the genome, cut the cognate sequence, and introduce insertions or deletions. CRISPR has all-but-replaced traditional cloning techniques in laboratories across the globe.

CRISPR has already ignited the imaginations of a generation of scientists. Now, automation is enabling genome editing with higher throughput with less hands-on effort.





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**BECAUSE
BREAKTHROUGHS
CAN'T WAIT**

- SCREENING SOLUTIONS
- Automated Liquid Handling
 - Assays and Reagents
 - Imaging and Detection Systems
 - Informatics

Imaging and detection systems, automation, informatics, and assays and reagents for high-throughput and phenotypic screening – together, they spell *discovery*.

Drug discovery is critical to our health and well-being. And to get therapies to market that much sooner, you need to accelerate your workflow, upstream and downstream. Our screening solutions are a crucial component in that effort: State-of-the-art imaging and detection instruments, assay technologies and reagents, and versatile automation systems, working together to ensure consistent, accurate, physiologically relevant results – with one-of-a-kind analytics to wrest more meaning from your findings. The *next* big breakthrough? It begins with you.

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**WE AUTOMATE
YOUR SCIENCE
NOT JUST YOUR SAMPLE PREP**

In scientific research labs, your procedures, protocols, and personnel are changing all the time. You have to be nimble and flexible, doing more with less—and your liquid handling has to work right along with you. So we deliver true walkaway automation, freeing you up for more data analysis, more experimentation, more *science*. We've even automated your setup process, making it easy to learn and use. Best of all, we can automate your science because we get your science—from first assay to final analysis. PerkinElmer automated liquid handling solutions. We've automated the most important application of all: *Yours*.

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