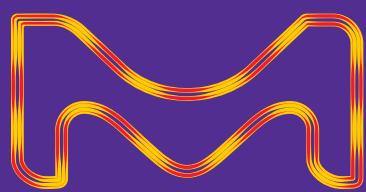


# maximize flexibility

ColorWheel® Flow Cytometry  
Antibodies and Dyes



The Life Science  
business of Merck  
operates as  
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the U.S. and Canada.

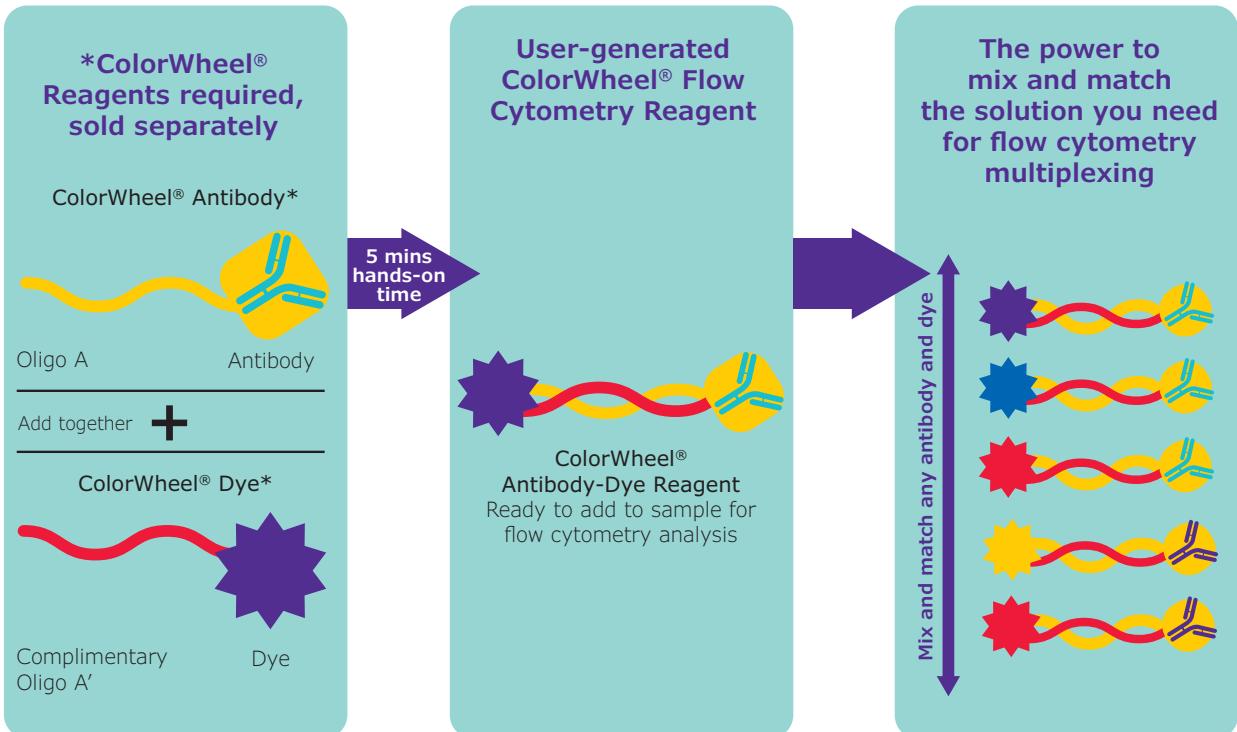
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# Designed for Simplicity and Flexibility

The ColorWheel® flow cytometry portfolio of antibodies and dyes was designed with simplicity and flexibility in mind to help streamline your flow cytometry workflow without compromising on quality.

## What Is the ColorWheel® Flow Cytometry Portfolio?

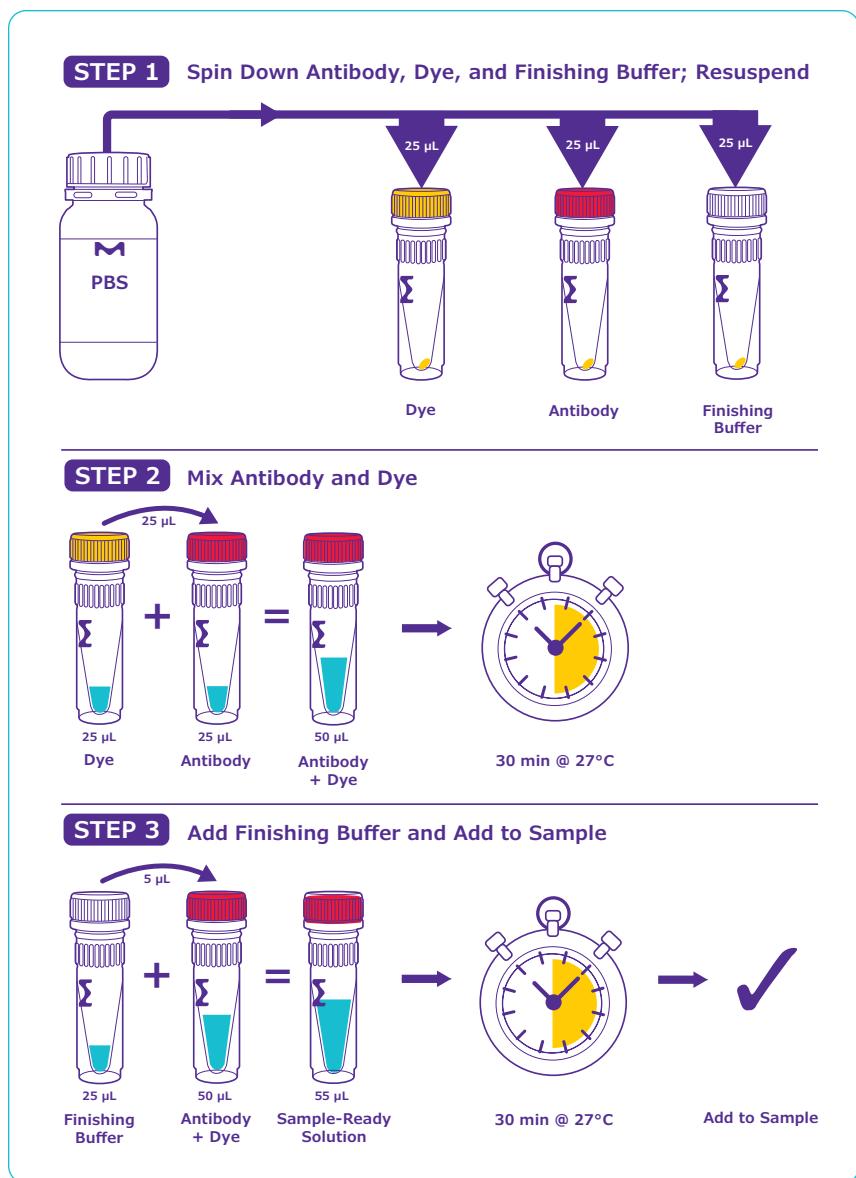
The ColorWheel® flow cytometry portfolio utilizes an oligo-based proprietary technology optimized for flow cytometry that allows users to independently select antibodies and dyes for assembly in any desired combination. With less than 5 minutes of hands-on time, these antibodies and dyes serve as an analog to primary conjugated antibodies. This mix-and-match ability is supplemented with a lyophilized product for enhanced stability and ambient shipping, as well as preservative-free presentation for sustainability and wider sample type compatibility.



## Why Choose ColorWheel® Antibodies and Dyes?

Setting up a successful flow cytometry experiment involves the consideration of many factors such as instrument and dye suitability, primary conjugated antibody availability, secondary antibody cross-reactivity, and more. The ColorWheel® flow cytometry portfolio was designed to minimize the added complications from these factors, bringing simplicity to your flow cytometry workflow without having to compromise on quality.

ColorWheel® antibodies and dyes help you obtain reliable, reproducible results by reducing the “unknowns” in your experiment.



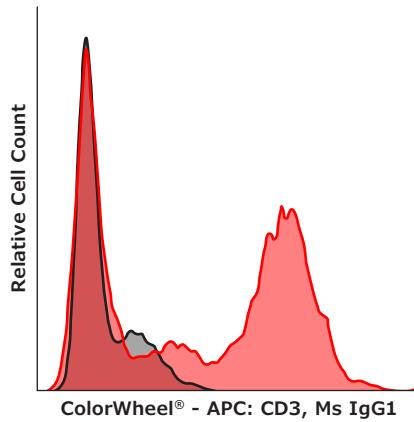
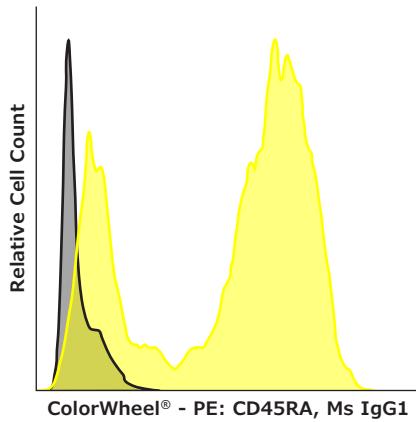
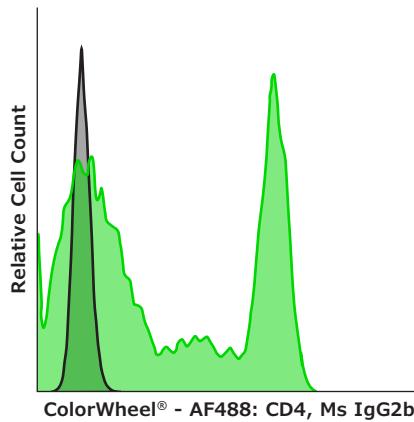
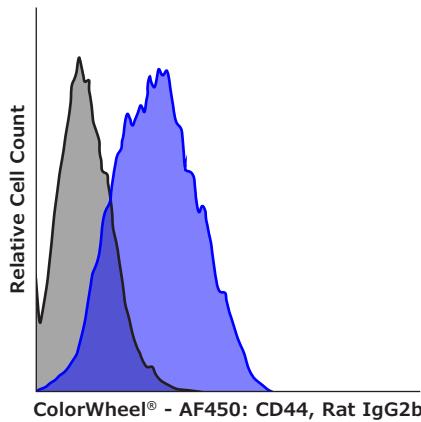
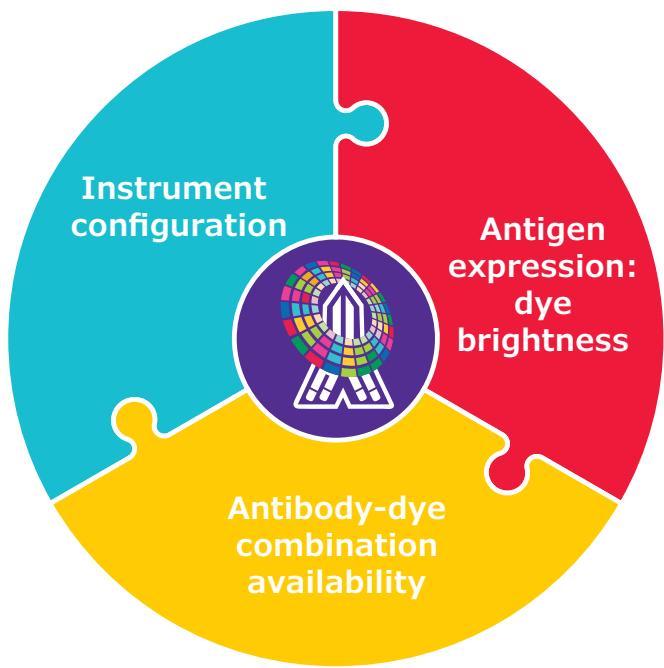
### Comparison to Conventional Flow Cytometry Methods

Conventional Method	Common Workflow Complication	Comparison to ColorWheel® Workflow
Conjugated Primary Antibodies	Requires antibody and instrument-compatible dye to be available together.	Mix and match any ColorWheel® antibody with any ColorWheel® dye for maximum flexibility.
Conjugated Secondary Antibodies	Requires repeated wash steps and adds cross-reactivity concerns.	3 step protocol with < 5 minutes of hands-on time. No cross-reactivity. No repeated wash steps.
Labeling Kits	Requires concentrated antibody, conjugation chemistry, and introduces variability to the data.	Mix equal volume of antibody and dye for sample-ready solution. In-house QC ensures robust performance.

The ColorWheel® portfolio of antibodies and dyes provides users with the freedom to design the experiments they want to conduct with the flexibility to adapt today's experiments to tomorrow's questions --- all in a simple procedure with no compromise in performance.

# The Multiplexing Puzzle

Multiplexing in flow cytometry can be a puzzle that researchers have to piece together. Flow cytometry multiplexing involves balancing various pieces of the puzzle including the configuration of the instrument, balancing antigen expression with dye brightness, and antibody-dye combination availability. If it is not possible to fit all these factors into one experiment, researchers need to compromise by performing multiple assays. Running multiple assays introduces different experimental conditions causing variability that may lead to unreliable data. The flexibility of ColorWheel® technology helps you fit the multiplexing puzzle pieces together.



ColorWheel® CD44, CD4, CD45RA, and CD3 antibodies paired with ColorWheel® AF450, AF488, PE, and APC dyes respectively run simultaneously in a multiplex format.

## Unlock Freedom in Assay Design

When solving the puzzle of multiplexing in flow cytometry, the flexibility that comes with ColorWheel® antibodies and dyes removes experimental constraints to unlock more freedom in assay design. See how the ColorWheel® portfolio solves the following puzzles:

### Expanding an existing multiplex assay by adding a new target.

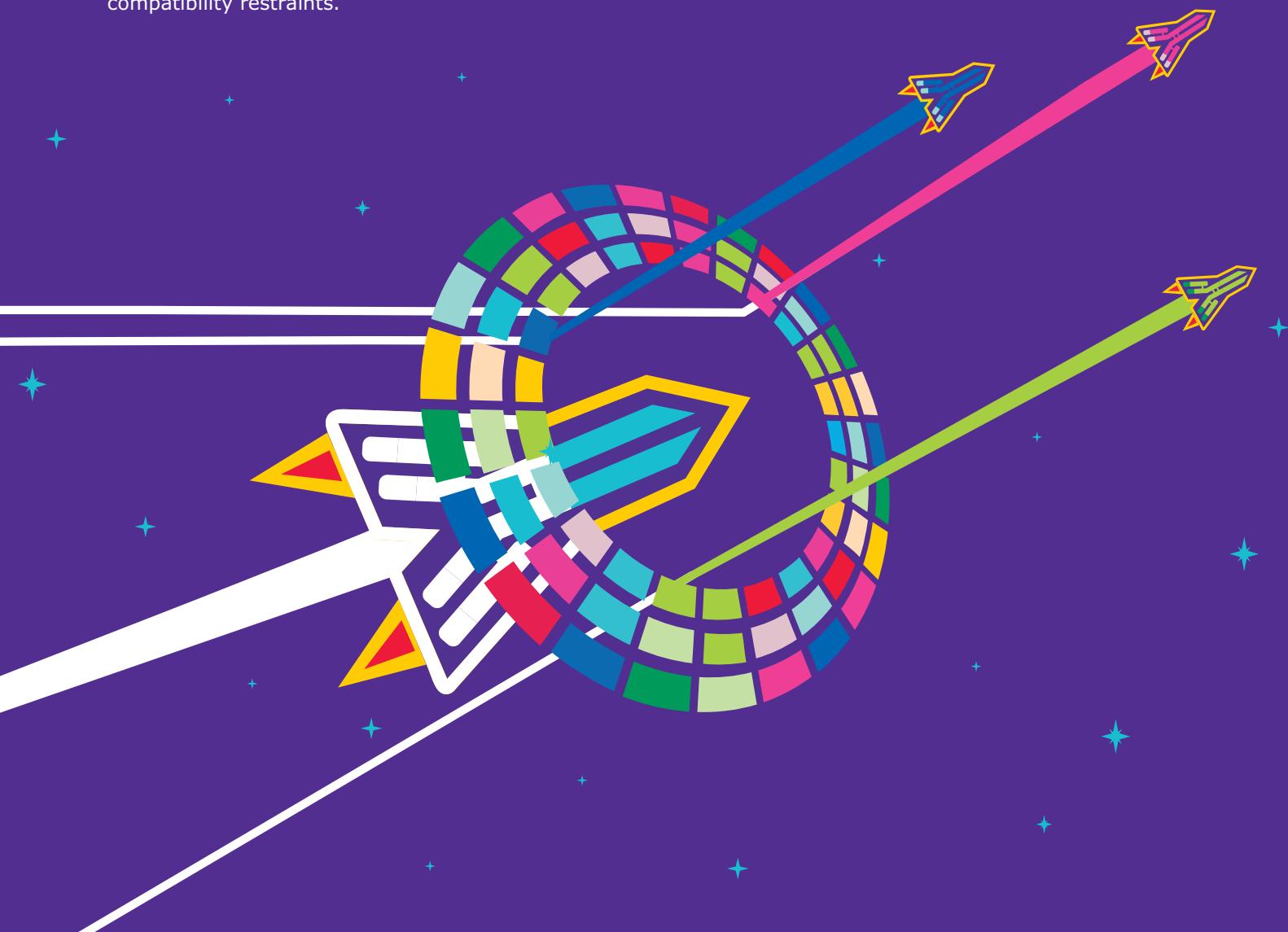
**Problem:** The new target is only commercially available conjugated to one dye, displacing the antibody already conjugated to that dye in your existing assay.

**ColorWheel® Solution:** Instead of forcing users to decide which target to analyze, the mix-and-match ability of ColorWheel® antibodies and dyes gives you freedom over your target choice by allowing a simple exchange between the antibodies already in the assay with any unused instrument-compatible dye.

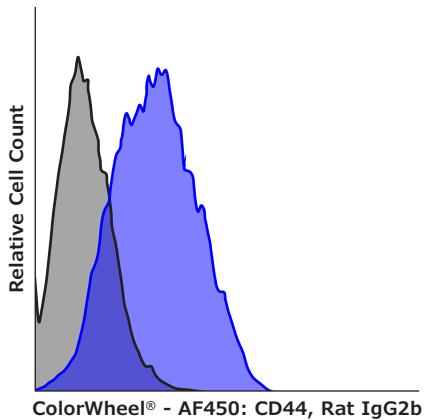
### Building a new multiplex assay with antigens of varying expression levels.

**Problem:** Matching antibodies against antigens of varying expression levels with dyes of suitable brightness consumes a lot of time and effort.

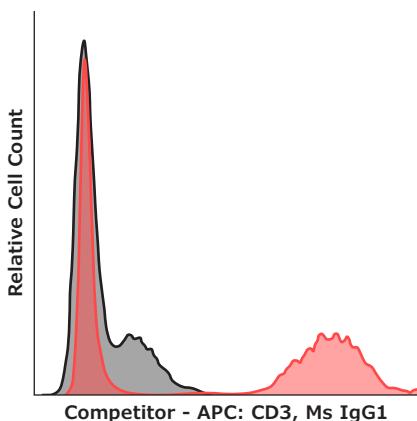
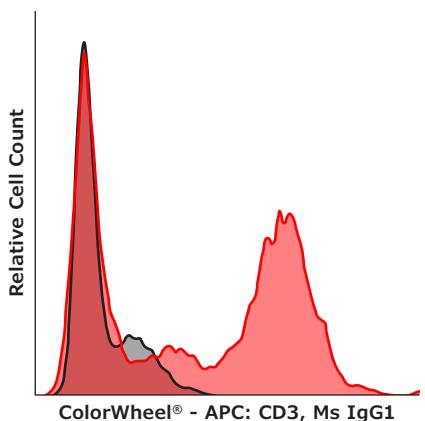
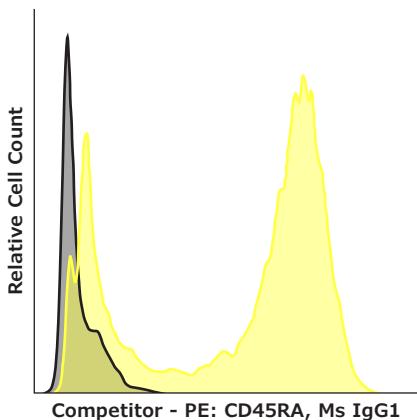
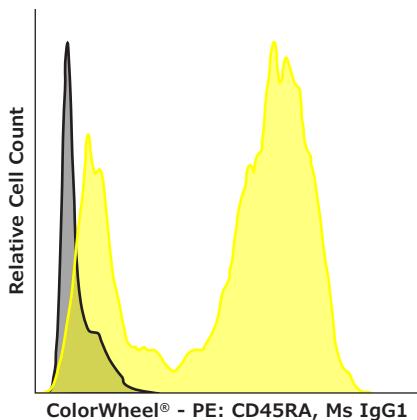
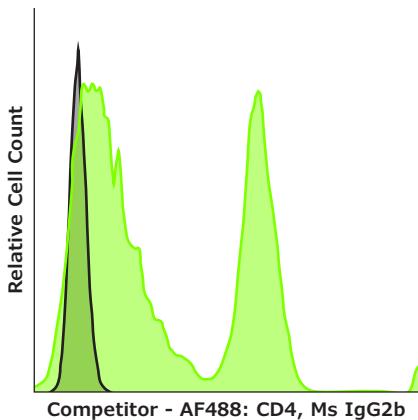
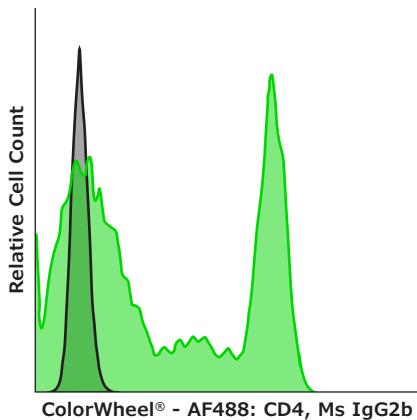
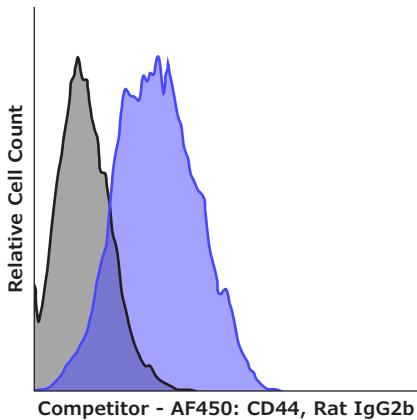
**ColorWheel® Solution:** The user-friendly ColorWheel® portfolio allows you to order the targets you want with the dyes that fit your instrument. Then, with the flexibility of ColorWheel® antibodies and dyes, simply mix and match your target and dyes at the bench as needed, freeing you from compatibility restraints.



## ColorWheel® Technology



## Conjugated 1° Antibody



Histograms showing relative cell counts of ColorWheel® antibodies paired with ColorWheel® dyes compared to traditional directly conjugated primary antibodies against the same targets. These were run simultaneously in a multiplex format.

## Flexibility Without Compromising Quality

ColorWheel® technology offers flexibility in your reagents without trading off the quality of your data. Compared to traditional directly conjugated primary antibodies, ColorWheel® antibodies and dyes show equivalent performance when run in multiplex assays.

You can also use ColorWheel® products to go with the flow of your experiment. Take control of your research with the peace of mind that you have eliminated any variability due to indirect conjugation and labeling kits.

# Maximize Your Budget

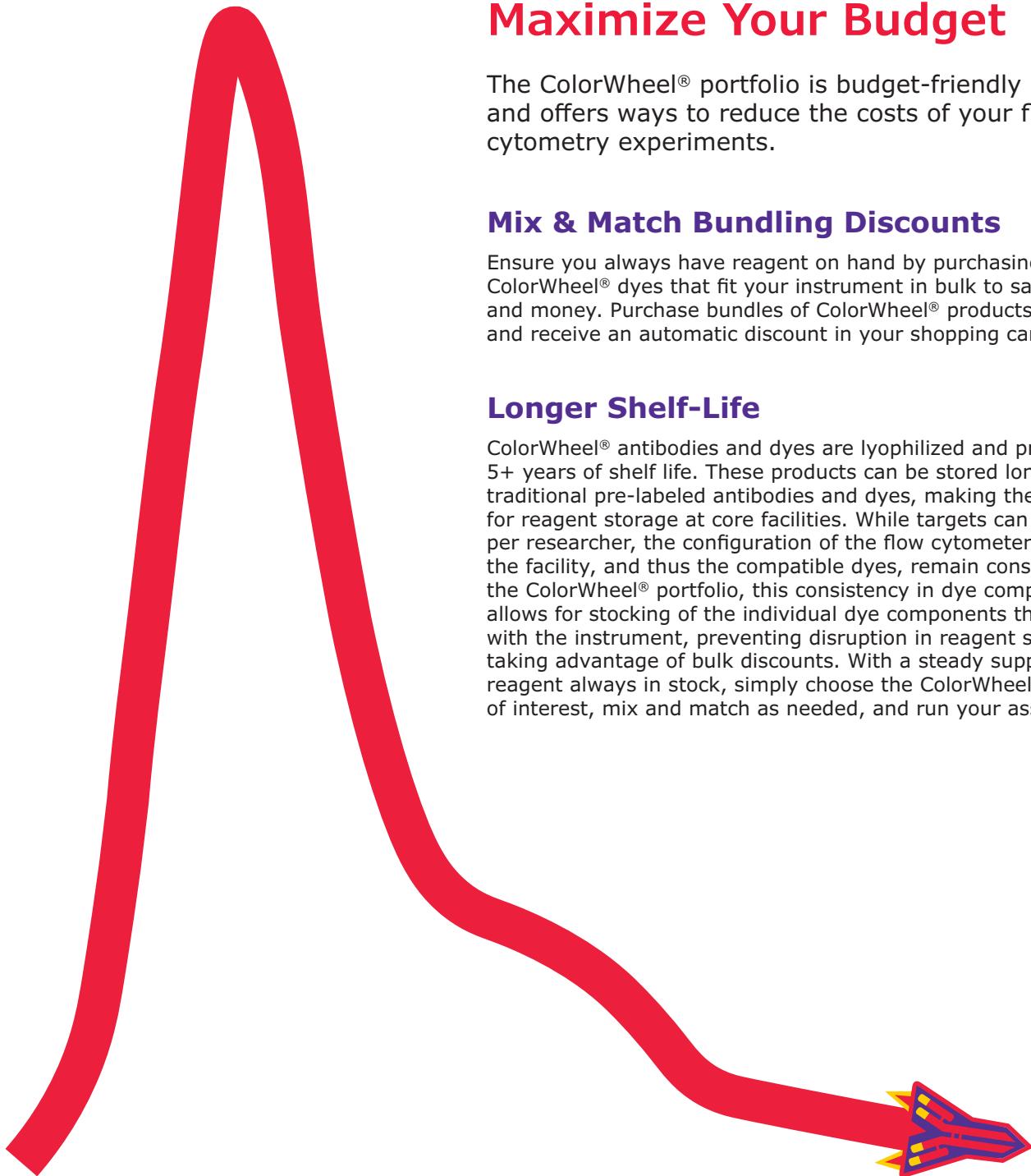
The ColorWheel® portfolio is budget-friendly and offers ways to reduce the costs of your flow cytometry experiments.

## Mix & Match Bundling Discounts

Ensure you always have reagent on hand by purchasing the ColorWheel® dyes that fit your instrument in bulk to save time and money. Purchase bundles of ColorWheel® products in groups and receive an automatic discount in your shopping cart.

## Longer Shelf-Life

ColorWheel® antibodies and dyes are lyophilized and provide 5+ years of shelf life. These products can be stored longer than traditional pre-labeled antibodies and dyes, making them ideal for reagent storage at core facilities. While targets can change per researcher, the configuration of the flow cytometers within the facility, and thus the compatible dyes, remain constant. With the ColorWheel® portfolio, this consistency in dye compatibility allows for stocking of the individual dye components that work with the instrument, preventing disruption in reagent supply and taking advantage of bulk discounts. With a steady supply of dye reagent always in stock, simply choose the ColorWheel® antibody of interest, mix and match as needed, and run your assay.



## Stay Connected to Discover More

Stay connected with us by scanning the convenient QR code printed on each ColorWheel® product label to take you to our ColorWheel® digital hub. Here you will find the newest additions to the ColorWheel® portfolio, as well as information and resources on the technology, applications, and more.

Our ColorWheel® antibodies are designed and tested with your needs in mind and are backed by our Antibody Guarantee.

Discover more at [SigmaAldrich.com/ColorWheel](https://SigmaAldrich.com/ColorWheel)



Lab & Production Materials

Merck KGaA  
Frankfurter Strasse 250  
64293 Darmstadt, Germany

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