BD FACSymphony™ A5 SE Cell Analyzer

Unlock the full potential of the BD FACSymphony™ platform with the flexibility of spectral unmixing or compensation workflows

BD

Five lasers and 48 detectors for maximum coverage of the fluorochrome emission spectrum

Access spectral abilities

on your BD FACSymphony™ A5 System with a BD FACSymphony™ A5 SE System upgrade kit

Choose between live spectral or compensation-based workflows in BD FACSDiva™ Software

Resolve critical cell populations

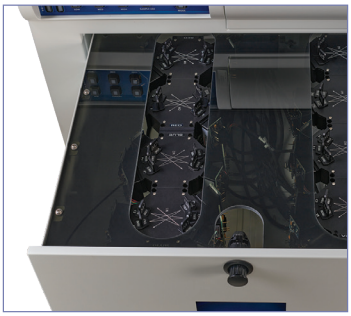
with high autofluorescence using autofluorescence unmixing

Perform spectral unmixing live on BD FACSDiva™ Software

or export the data for analysis in FlowJo™ Software (v10.6 or later)

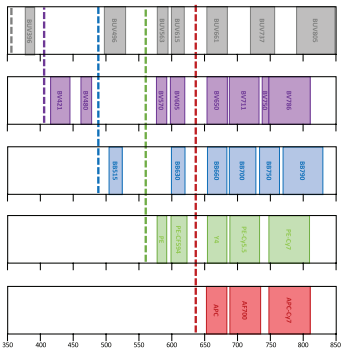
The BD FACSymphony™ A5 SE Cell Analyzer enables both spectral unmixing and compensation workflows

- Algorithmically optimized filter set collects the full spectrum of emitted light
- Algorithm trained on available fluorochromes and scalable detector array technology allows optimized placement of 48 detectors across five on-board lasers
- High-performance PMTs for enhanced resolution



- Using the familiar BD FACSDiva™ Software workflow, assign a fluorochrome to a detector with the option to analyze using compensation or spectral unmixing live during acquisition
- Visualize fluorochrome profiles with spectral plots
- Extract autofluorescence from highly fluorescent cells to potentially improve panel resolution

BD FACSymphony™ A5 Cell Analyzer



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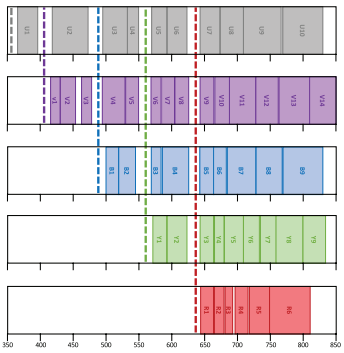
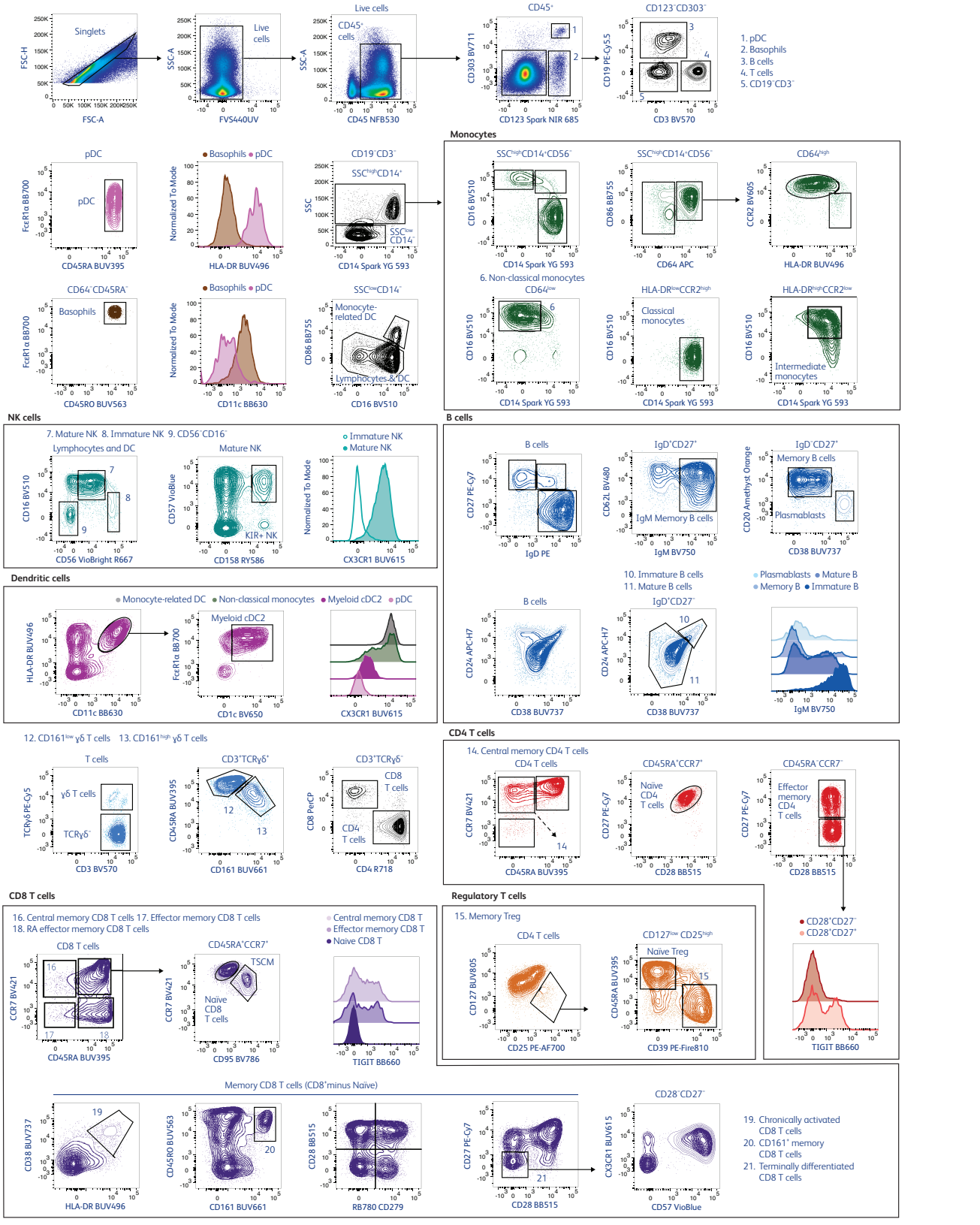


Figure 1. Comparison of common BD FACSymphony™ A5 and A5 SE Cell Analyzer filter configurations

Distinguish between spectrally similar fluorochromes

The BD FACSymphony™ A5 SE Cell Analyzer features an optimized filter set to collect the full spectrum of emitted light, increasing flexibility in fluorochrome choices and enabling simultaneous analysis of fluorochromes with similar spectral signatures. The following panel contains a total of 40 fluorescence reagents. It includes the new spectrally optimized fluorochromes, BD Horizon RealYellow™ and RealBlue™ Reagents and was used to characterize a variety of immune cell populations in human peripheral blood.



Gating strategy for identification of immune cell subsets in human peripheral blood using a 40-color panel

Cell populations			Surface phenotype
Live leukocytes			Singlets+FVS440UV-CD45+
Basophils			Singlets+FVS440UV-CD45+CD123+CD303-CD64-CD45RA-FcεR1α+CD45RO+
Plasmacytoid dendritic cells (pDC)			Singlets+FVS440UV-CD45+CD123+CD303+CD45RA+FcεR1α^{low}
Monocytes			Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{high}CD14$^{high/low}$CD56-
Monocyte subsets		Classical monocytes	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{high}CD14$^{high/low}$CD56-CD86$^{high/low}$CD64^{high}CCR2^{high}HLA-DR^{low}CD14^{high}CD16^{low}
		Intermediate monocytes	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{high}CD14$^{high/low}$CD86$^{high/low}$CD64^{high}CCR2^{low}HLA-DR^{high}CD14^{high}CD16+
		Nonclassical monocytes	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{high}CD14$^{high/low}$CD86$^{high/low}$CD64^{low}CD14^{low}CD16^{high}
Dendritic cells		Monocyte-related DC	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{low}CD14-CD86+CD16+
		Myeloid dendritic cells (cDC2)	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{low}CD14-CD86-CD16-CD56-HLA-DR+CD11c+CD1c+FcεR1α+CX3CR1^{low}
NK cells			Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{low}CD14-CD86-CD16+CD56$^{high/low}$
NK cell subsets		Immature NK cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{low}CD14-CD86-CD16+CD56^{high}CX3CR1-
		Mature NK cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{low}CD14-CD86-CD16+CD56^{low}CX3CR1+
		KIR^{-}CD57^{+} NK cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19-SSC^{low}CD14-CD86-CD16+CD56^{low}CD158+CD57+
B cells			Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19+
B cell subsets		Immature B cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19+CD27-IgD+CD24^{high}CD38^{high}IgM^{high}
		Mature B cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19+CD27-IgD+CD24+CD38+IgM^{low}
		IgM memory B cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19+CD27+IgD+CD62L+IgM^{high}
		Memory B cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19+CD27+IgD-IgM-
		Plasmablasts	Singlets+FVS440UV-CD45+CD123-CD303-CD3-CD19+CD27+IgD-CD20-CD38^{high}IgM-
T cells			Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-
T cell subsets	γδ T cells		Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ+
	γδ T cell subsets	CD161^{high} γδ T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ+CD45RA+CD161^{high}
		CD161^{low} γδ T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ+CD45RA+CD161^{low}
	CD4 T cells		Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8-CD4+
	CD4 T cell subsets	Naïve CD4 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8-CD4+CD45RA+CCR7+
		Central memory CD4 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8-CD4+CD45RA-CCR7+
		Effector memory CD4 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8-CD4+CD45RA-CCR7-CD28+CD27+TIGIT+/-
		Effector Th1 CD4 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8-CD4+CD45RA-CCR7-CD28+CD27-TIGIT-
		Naïve regulatory T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8-CD4+CD127^{low}CD25^{high}CD39-CD45RA+
		Memory regulatory T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8-CD4+CD127^{low}CD25^{high}CD39+CD45RA-
	CD8 T cells		Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-
	CD8 T cell subsets	Naïve CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-CD45RA+CCR7+CD95-
		T stem cell memory cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-CD45RA+CCR7+CD95+
		Central memory CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-CD45RA-CCR7+TIGIT+/-
		Effector memory CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-CD45RA-CCR7-
		RA effector memory CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-CD45RA+CCR7-TIGIT+/-
		Terminally differentiated CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-[CD45RA+CCR7+]-CD28-CD27-CX3CR1+CD57+
		Chronically activated CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-[CD45RA+CCR7+]-HLA-DR+CD38+
		CD161^{+} memory CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-[CD45RA+CCR7+]-CD161+
		CD279-expressing CD8 T cells	Singlets+FVS440UV-CD45+CD123-CD303-CD3+CD19-TCRγδ-CD8+CD4-[CD45RA+CCR7+]-CD279+

This gating strategy allows identification of a selected number of cell populations after staining of human peripheral blood mononuclear cells (PBMCs) with a cocktail of 39 antibodies and a viability dye.

Class 1 Laser Product.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. BD Horizon RealBlue™ Reagents are not released and will be available in the Fall 2022

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bdbiosciences.com