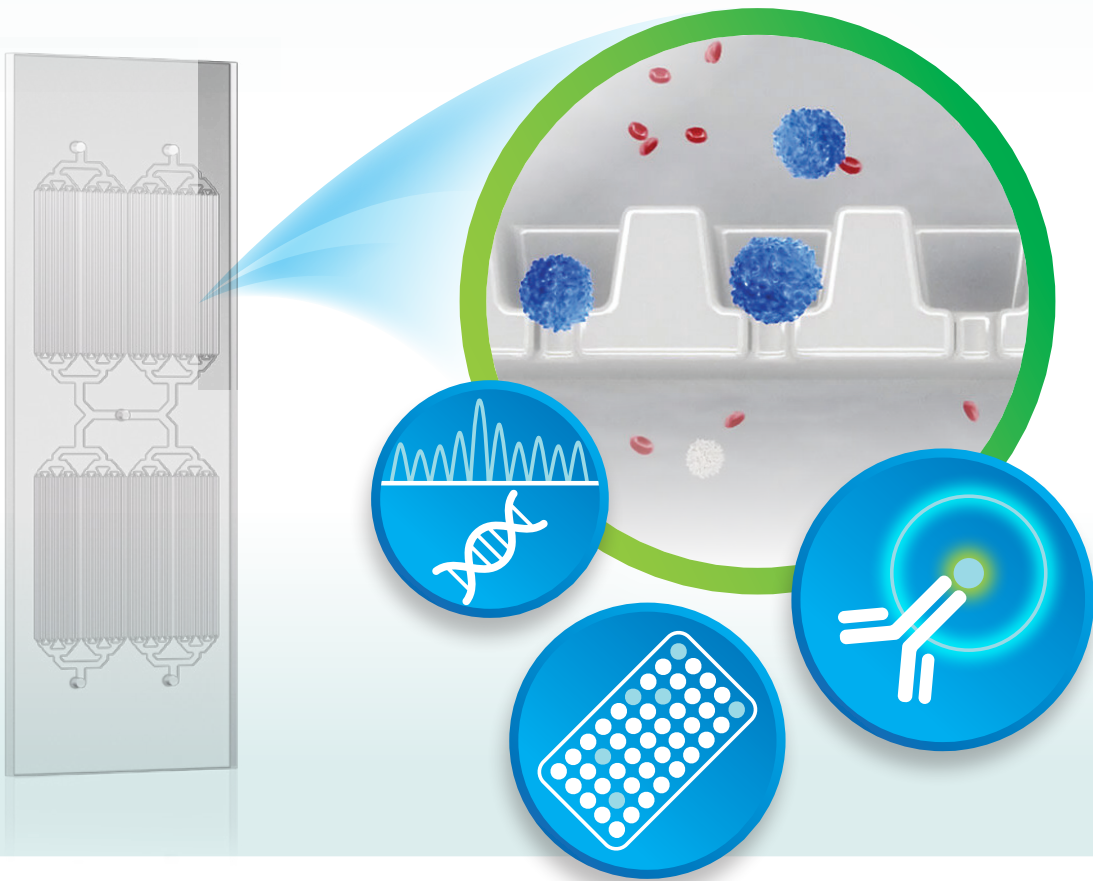


Add new depth to
rare cell studies with the
Genesis System and
Celselect SlidesTM



Capture more.
Recover more.
Accomplish more.



New Depth to Rare Cell Research

Genesis Cell Isolation System with Celselect Slides

- Simplified benchtop solution for rare cell isolation
- High efficiency and gentle size-based capture
- Customization for diverse applications and different samples



Celselect Slides Enrichment Kit

Kit for cell capture and recovery for downstream applications



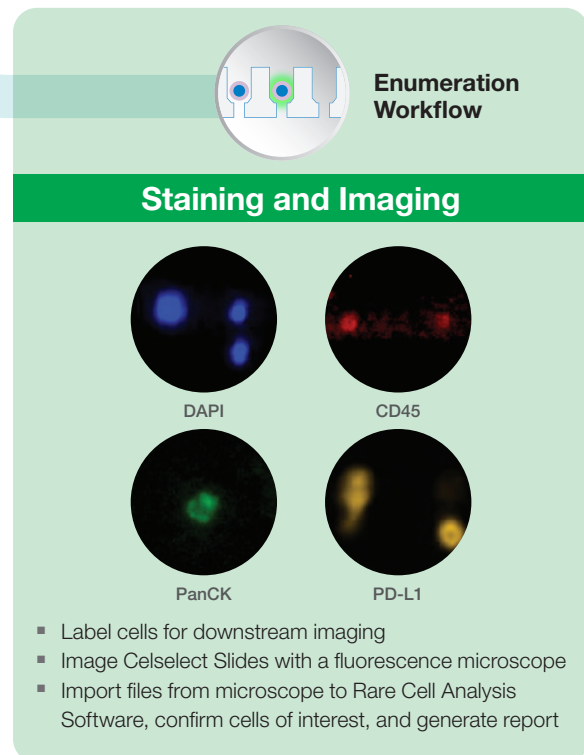
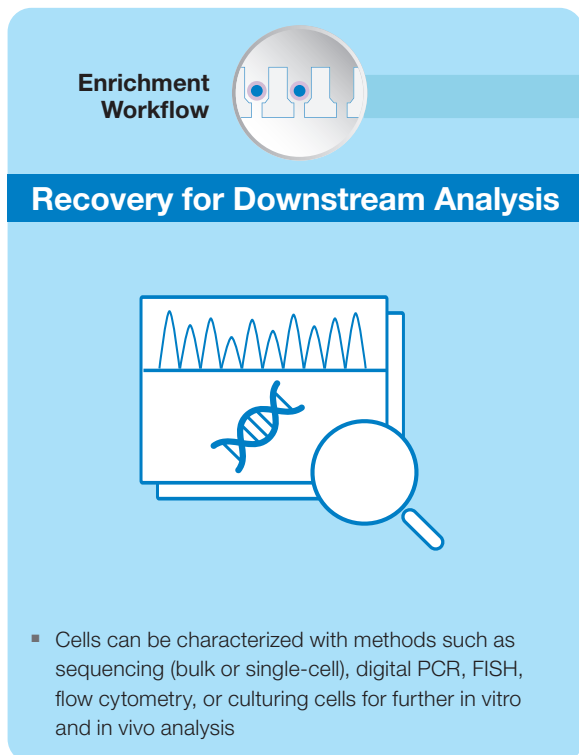
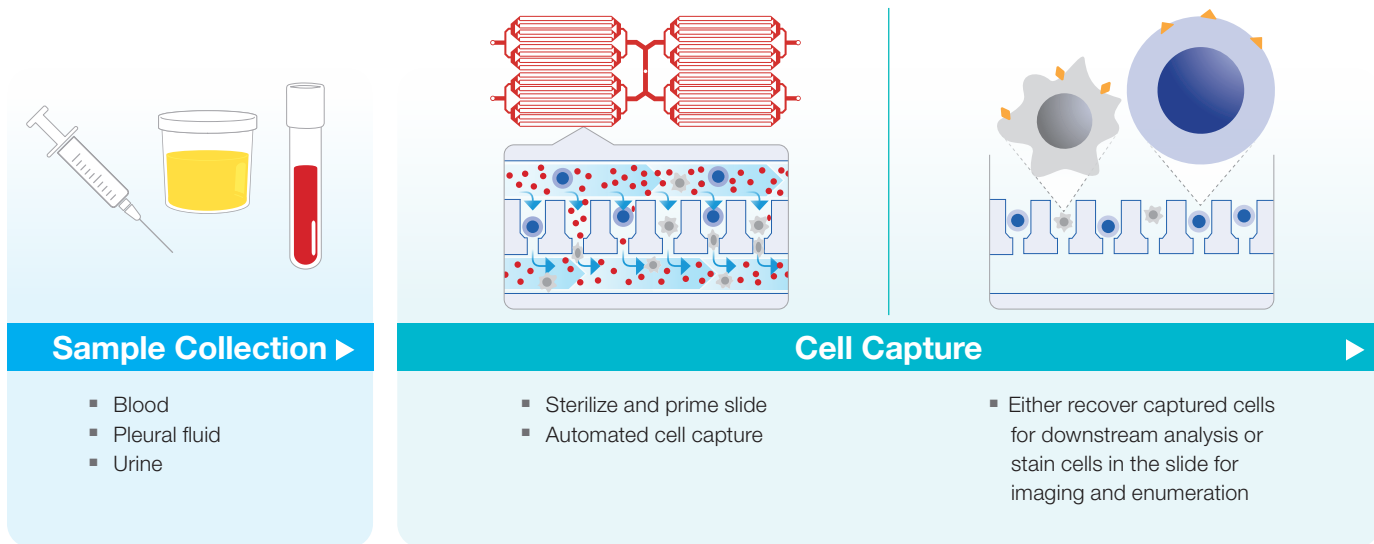
Celselect Slides Enumeration Kits

Kits for cell capture, cell staining via immunolabeling, and on-slide imaging



The Genesis System has two validated workflows:

- Recovery of viable cells for downstream analysis
- Capture and quantification of cells using microscopy



Capture More. Recover More.

Cell Capture Simplified with the Genesis System and Celselect Slides

Using patented microfluidic technology, the Genesis System and Celselect Slides enable:

- Gentle capture of individual cells and cell clusters 8–30 μm , regardless of phenotype (Figures 1 and 3)
- High cell capture rate and reliable detection of samples containing low cell concentrations (Figure 2)
- Capture without Ficoll gradients, or RBC and WBC lysis preprocessing

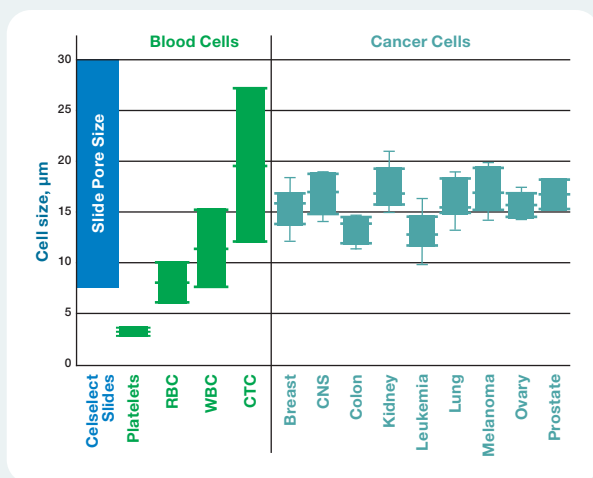


Fig. 1. Pore size of Celselect Slides relative to range of blood and cancer cells. Various cell types are suitable for capture. CNS, central nervous system; CTC, circulating tumor cell; RBC, red blood cell; WBC, white blood cell.

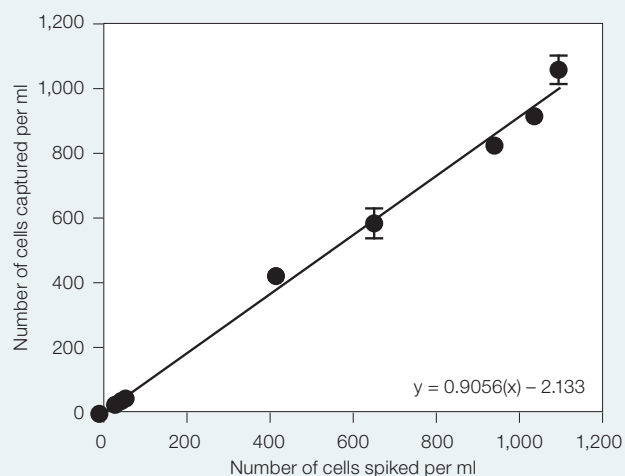


Fig. 2. Capture efficiency using MCF-7 cells with different input cell amounts. Strong linear correlation between capture efficiency and low sample concentrations of 10–1,000 cells/ml.

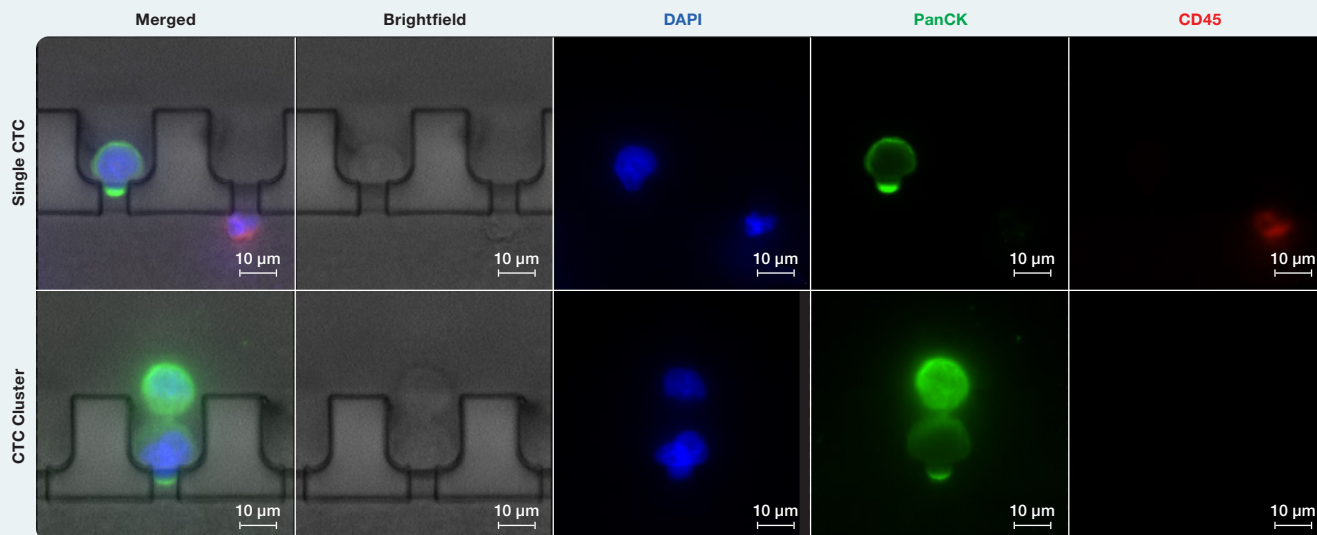


Fig. 3. Fluorescent microscope images of single CTCs and CTC clusters captured and stained in Celselect Slides. Cells positive for 4',6-diamidino-2-phenylindole (DAPI) and pancytokeratin (PanCK), and negative for CD45 are counted as circulating tumor cells (CTCs) by Rare Cell Analysis Software.

Improved Utility across Sample Types

- Liquid biopsies and other cell suspensions are complex and heterogenous. When collecting the cellular fraction from these samples, it is imperative to capture and recover cells in a state suitable for downstream applications
- Gentle size-based cell capture with Celselect Slides eliminates the guesswork and enables analysis of various samples, including many types of cancer cells, immune cells, and other cell types found in liquid biopsies, with high capture and release efficiencies (Figures 4 and 5)

Tube Type	Capture Efficiency, %	
	Enrichment	Enumeration
K2-EDTA	84	70
K3-EDTA	84	51*
Streck (Cell-Free DNA BCT)	80	91
Menarini Silicon Biosystems, CellSave	83	79
Menarini Silicon Biosystems, CellRescue	75	79
PAXgene (DNA)	72	80
Heparin (Li/Na)*	—	—
Citrate*	—	—

* Compatible with further protocol optimizations using Protocol Builder Software Tool.

Fig. 4. Celselect Slides are suitable for many blood tubes. For both enumeration and enrichment applications, cells from multiple blood collection tube types are captured with high efficiency without workflow modifications.

Cancer	Cell Line	Enrichment	
		Capture Efficiency, %	Release Efficiency, %
Breast	MCF-7	84	69
Melanoma	A375	82	76
Prostate	PC3	90	91
Pancreas	PANC-1	88	77
Glioma	U87MG	90	82
	A549	78	80
Lung	H1650	84	62
	H1975	90	57
Leukemia	Kasumi-1*	24	85
	K562	52	46
Colon	SW620	68	74
Ovary	SKOV3	66	65

* Size of Kasumi-1 cells: 6–10 μm .

Fig. 5. Efficient capture and release. Cells for most cancers in the range of 8–30 μm can be captured and released with high efficiencies.

Accomplish More.

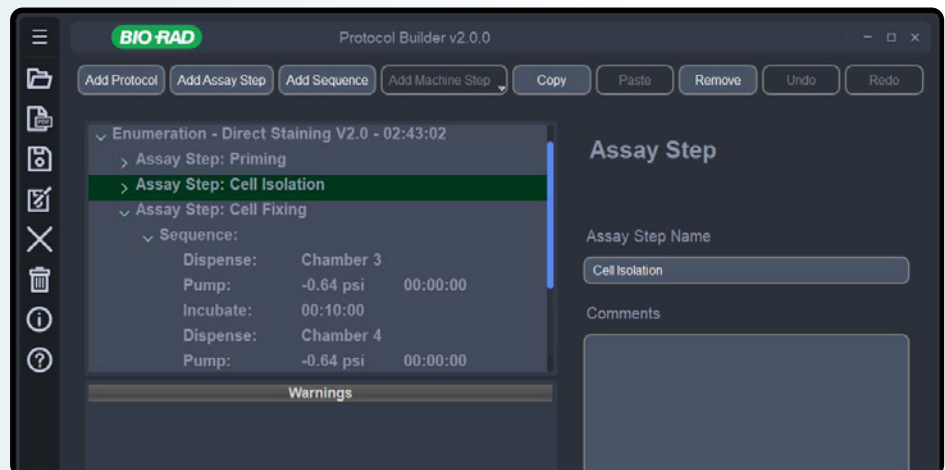
Genesis Protocol Builder Software Tool

Customize, optimize, or develop new cell isolation and staining methods.

- Design protocols for application development
- Modify and save existing protocols
- Easily share protocols via email or USB

Several tunable parameters:

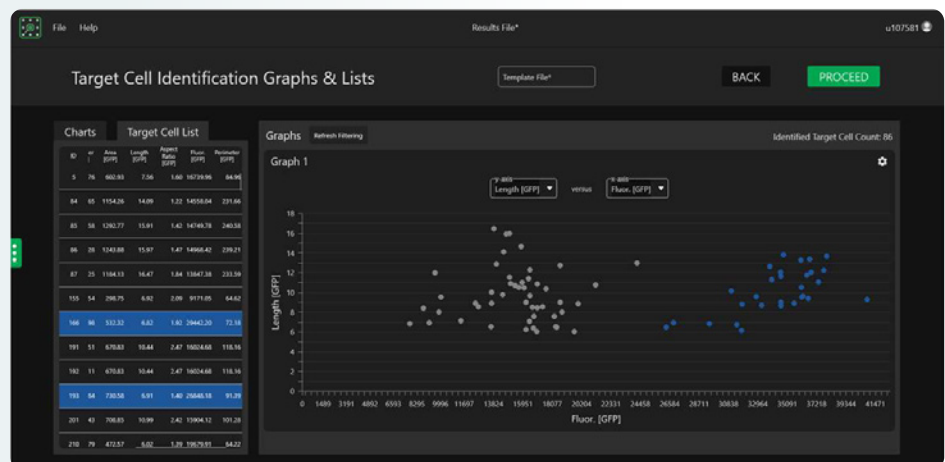
- Reagent dispensing
- Pump pressures
- Incubation settings



Rare Cell Analysis Software

Automated cell counting with customizable parameters and reports generated with validated results.

- Identify cells based on fluorescent labels and morphology
- Compatible with images from multiple fluorescence microscopes
- Supports predefined or user-defined antibody panels
- Analyze images with up to 6 different fluorescence channels
- Graphical output of cell gating
- Use preset Bio-Rad gating parameters or customize for specific user applications



Amplify Your Rare Cell Research

Empower a wide range of application and analysis possibilities with the Genesis System with Celselect Slides technology:

Rare Cell/Circulating Tumor Cell Applications

- Personalized medicine
- Cancer staging and monitoring
- Biomarker discovery
- Immunotherapy
- Treatment monitoring and resistance mechanisms
- Regenerative medicine
- Prenatal testing
- Disease monitoring (autoimmune, infectious)

Molecular Analysis

- Droplet Digital™ PCR (ddPCR™)
- qPCR
- RNA-Seq
- Single-cell library prep

Cellular Analysis

- Flow cytometry
- Western blotting
- Antibodies
- Cell culture
- Microscopy

Learn More.



Ordering Information

Catalog #	Description
CEL20101	Genesis Cell Isolation System , includes Genesis instrument, software, and accessories necessary to run Celselect Slides assays
CEL80110	Celselect Slides Enrichment Kit , includes reagents and consumables for cell capture and recovery for downstream applications of 4 samples
CEL80111	Celselect Slides Enumeration Indirect Stain Kit , includes reagents and consumables for cell capture and staining of 4 samples via labeled secondary antibody
CEL80112	Celselect Slides Enumeration Direct Stain Kit , includes reagents and consumables for the capture and staining of 4 samples via labeled primary antibody
CEL96001	Genesis System, All-Inclusive Service with Preventative Maintenance , includes 1-year on-site Extended Coverage Service Plan. Unlimited repair including travel, parts, and labor. Includes annual preventative maintenance
CEL96005	Genesis System, Annual Preventative Maintenance , includes on-site Preventative Maintenance one-time annual service; travel and labor included

Visit [bio-rad.com/Celselect](https://www.bio-rad.com/Celselect) to learn more about the Genesis System and Celselect Slides.

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