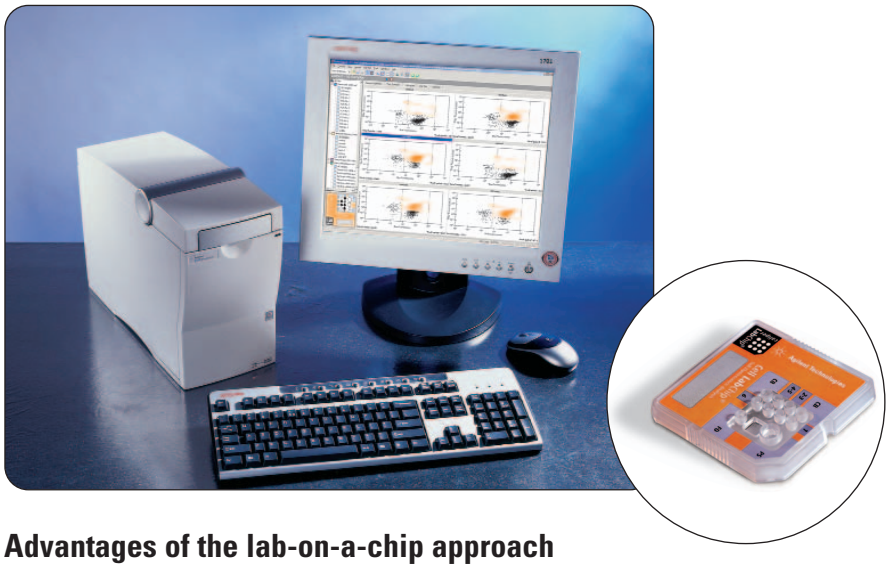
Cell Solutions Series II kits*

On-chip flow cytometry – an easy way to acquire cell-based fluorescence parameters



Whether you are doing transfection experiments for protein expression, studying apoptosis in cell cultures or looking to optimize your gene silencing experiments, the Agilent cell kit makes it easy to measure fluorescence parameters from indiviual cells.

Specifications

- Automated analysis of up to 6 cell samples in less than 30 minutes
- Detection limit of 5,000 MESF (high sensitivity red channel, excitation 630 nm / emission 680 nm, FL4) and 2,000,000 MESF (blue channel, excitation 470 nm / emission 525 nm, FL1)
- With a recommended cell density of 2.0×10^6 /mL usually 1000 cells are detected per sample
- Minimum cell throughput 2.5 cells/sec.

Cell Kit
(Reorder number 5067-1519)
Includes:
- 25 Chips
- Chip priming station
- Focusing dye
- Cell buffer for density and viscosity
- 2 Cells buffer for handling few cells

Cell Checkout Kit
(Reorder number 5067-1520)
Includes
- 7 Checkout chips
- Chip priming station
- Focusing dye
- Cell buffer
- Red and blue checkout beads

Advantages of the lab-on-a-chip approach

- **Easy-to-use system** – Short setup time and easy straightforward data analysis software makes flow cytometry applicable for everyone
- **Analyze a broad range of cell parameters** – endogenous fluorophores such as GFP, antibody staining, or apoptosis detection by Annexin V binding as well as Caspase-3 detection, live/dead cell dyes and much more
- **Adapt or develop your own protocols** – general application tools in the software allow you to adapt the system to your assay requirements or use predefined flow cytometric assays for easy startup
- **Minimal sample consumption** – work with 10 µl cell suspension (20,000 down to 2,500 cells) – enables flow cytometry analysis of primary and other precious cells
- **Automation** – simply load one to six samples onto a chip and start run
- **On-chip staining procedure** – speeds up workflow
- **Analyze a large variety of cell samples** – the system works equally well on most kinds of eukaryotic cells
- **Conveniently archived and stored digital data** – easily share data with others and export it for publication or presentation
- **Single platform** – upgrade your 2100 bioanalyzer with the flow cytometry set (G2948CA) for the automated analysis of cells, nucleic acids and proteins (for "B" and "C" series instruments only)

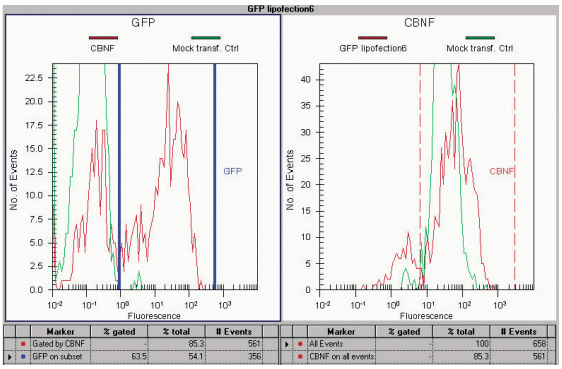
* Requires 2100 bioanalyzer – not available for 2100 e-bioanalyzer

Agilent Technologies

Solutions for a wide range of cell applications

Transfection optimization

- Measure expression of green fluorescence protein (GFP) as reporter gene
- Transfection efficiency of Cy5 labeled siRNA to optimize delivery
- Counterstain with live-cell dye in second reference color

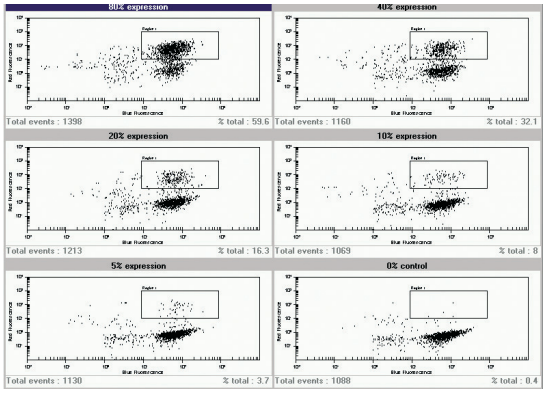


GFP transfection experiment showing the overlay of mock transfected cells and GFP expressing cells. Live cell population is defined by adjusting CBNF marker (right histogram). Result of 63.5 % GFP positve cells within live cells is obtained by gating and adjustment of GFP marker (left histogram).

Useful for monitoring the success of a wide range of transfection experiments, e.g. protein expression or gene silencing (using Cy5 labeled siRNA).

Measure cellular protein expression

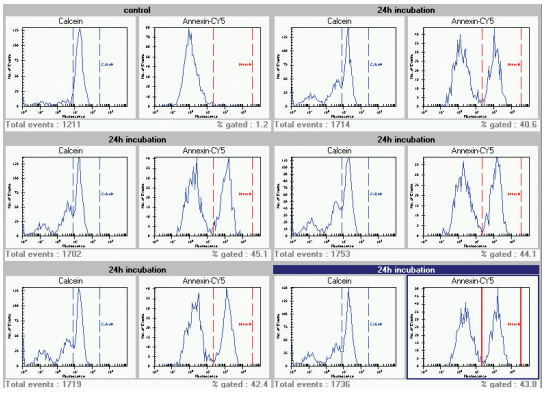
- Apply antibody staining with direct labeled or secondary antibodies
- Expression of cell surface proteins
- Expression of intracellular proteins



Cells can be differentiated depending on the expression of a protein marker.The high sensitivity, laser based red channel is used to detect and quantify signals from an antibody stain like APC (allophycocyanin) or Cy5. A counterstain with the live-cell stain calcein allows to gate on living cells.

Apoptosis assays

- Measure apoptosis by Annexin V binding of live cells
- Apoptotic cells can also be detected by intracellular anti body staining of active caspase-3
- Detect DNA laddering (DNA assay)



Annexin V binds to phosphatidylserine (PS) – a membrane lipid that is kept to the inner leaflet of the cell membrane of intact cells. Exposure of PS to the outer leaflet is an early indicator of apoptotic processes. Annexin V binding is made detectable by Cy5 staining of the annexin V via biotin-streptavidin interaction. Calcein staining of the cells is used as a live control to distinguish living and apoptotic cells from dead cells.

Kits for the Agilent 2100 bioanalyzer are available for the analysis of DNA, RNA, proteins and cells.

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