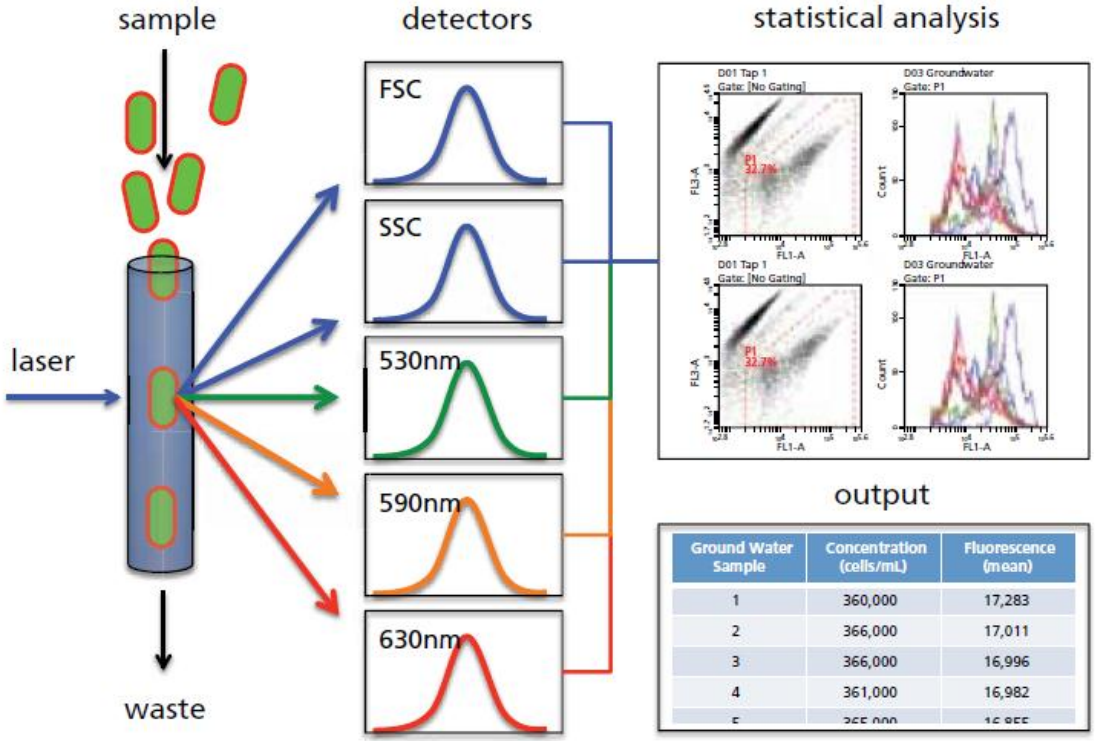
BD Accuri™ C6

Flow cytometry within reach.™

BD Helping all people live healthy lives

V1.0 July 2012

How it works



output

Ground Water Sample	Concentration (cells/mL)	Fluorescence (mean)
1	360,000	17,283
2	366,000	17,011
3	366,000	16,996
4	361,000	16,982
5	365,000	16,855

BD Accuri™ C6

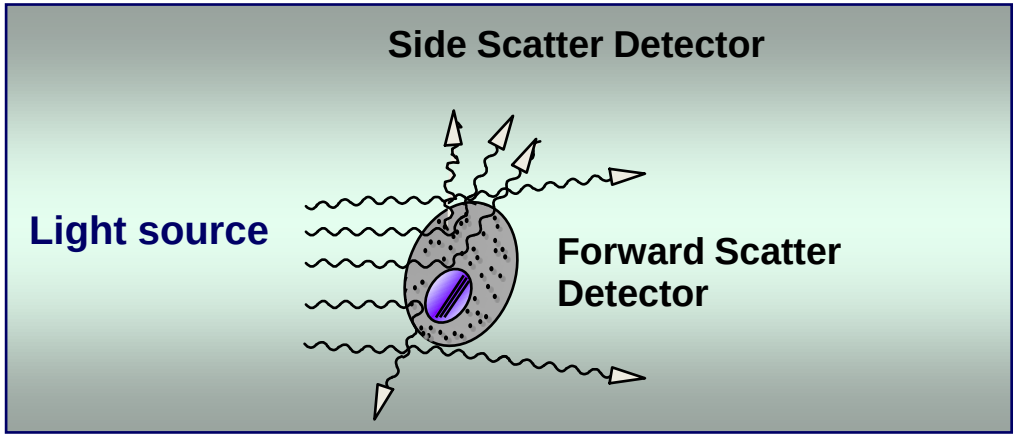
- Affordable, easy- to- use Flow Cytometer
- 2 lasers and 6 detectors
- A flow cytometer for every lab

Flow Cytometric measurements

- Relative size (Forward Scatter-FSC)
- Relative internal complexity (Side Scatter-SSC)
- Relative fluorescence intensity

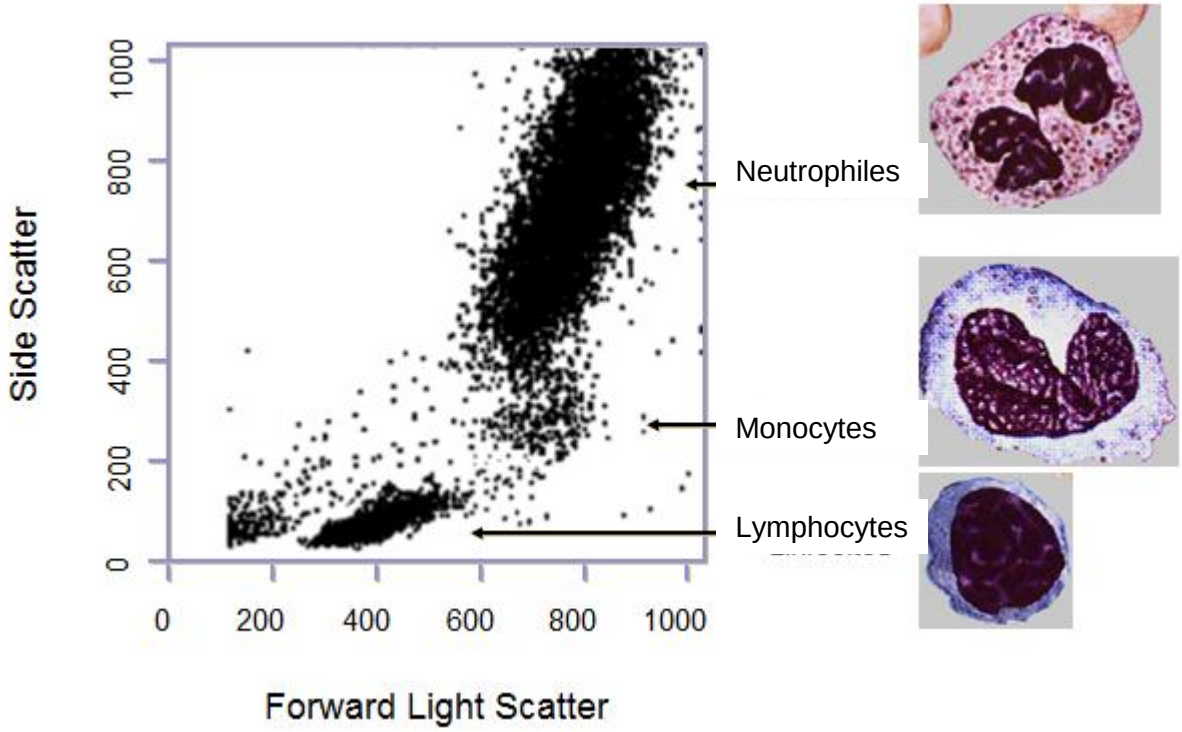
Introduction to Flow Cytometry

Size and granularity

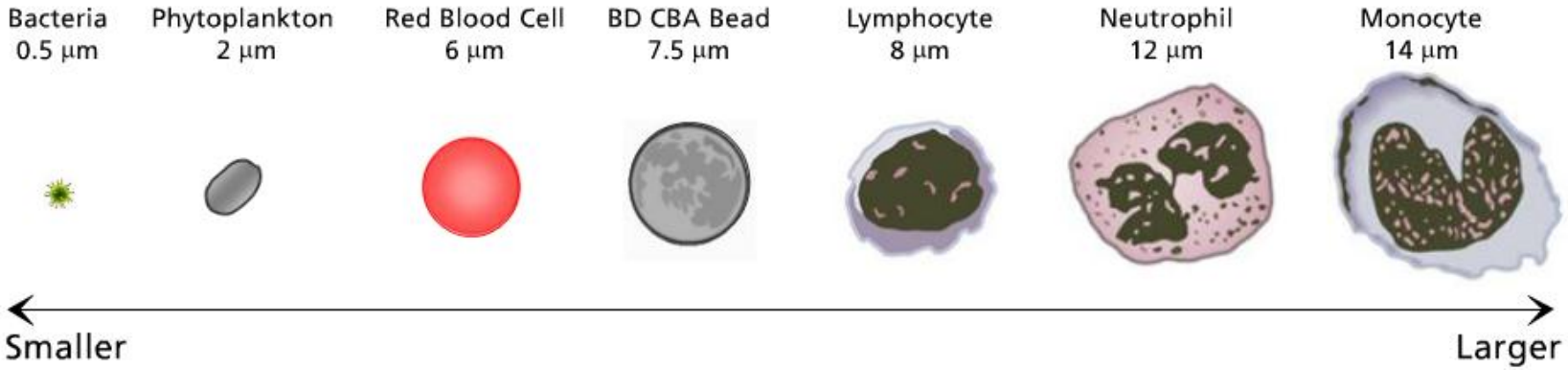


- FSC:
  - Related to cellular size
- SSC:
  - Related to internal complexity
  - Measured at 90º

Introduction to Flow Cytometry

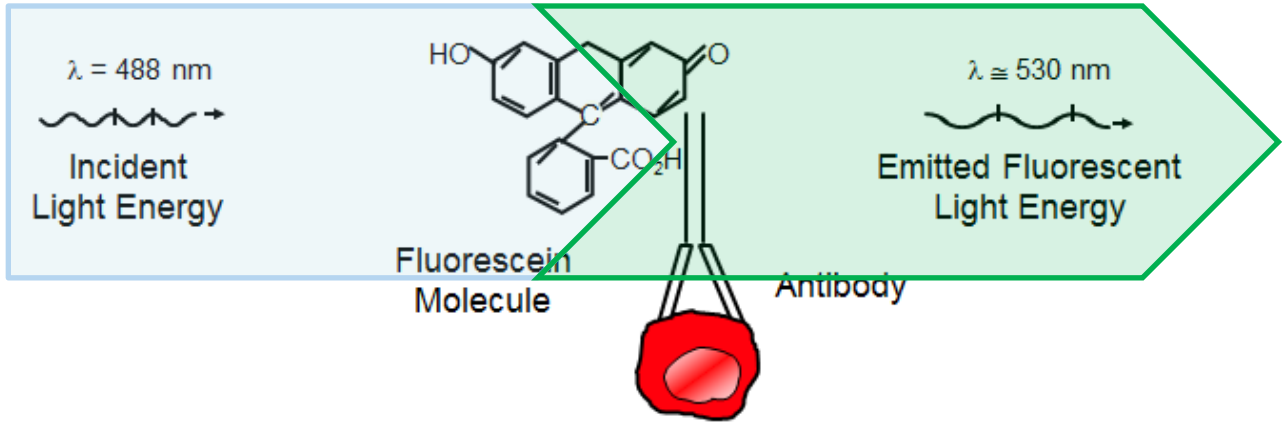


What can we detect by Flow Cytometry?



Introduction to Flow Cytometry

- Fluorescence

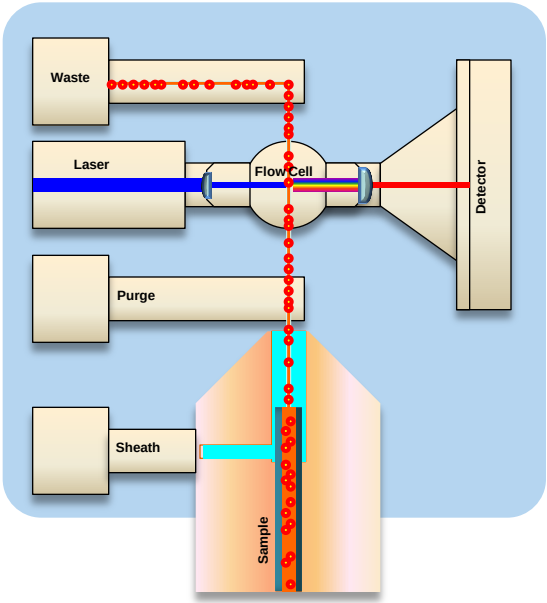


Introduction to Flow Cytometry

- Flow cytometer needs a combined system including:
  - Fluidics: Introduce and focus the sample in the flow cell
  - Optics: Illuminate the cells and direct the resulting light and fluorescence to the detectors
  - Electronics: Convert light to electronic signals that can be analysed in a computer

Fluidics

- Non-pressurized, peristaltic pump-driven system
- User adjustable flow rate and core diameter for a variety of applications
- Volume reported for absolute counts
- Minimum sample volume 50 µL
- Up to 10,000 events/second



Optical System

- Excitation Optics
  - Lasers
- Collection Optics:
  - Filters that guide signal wavelenghts to a specific detector

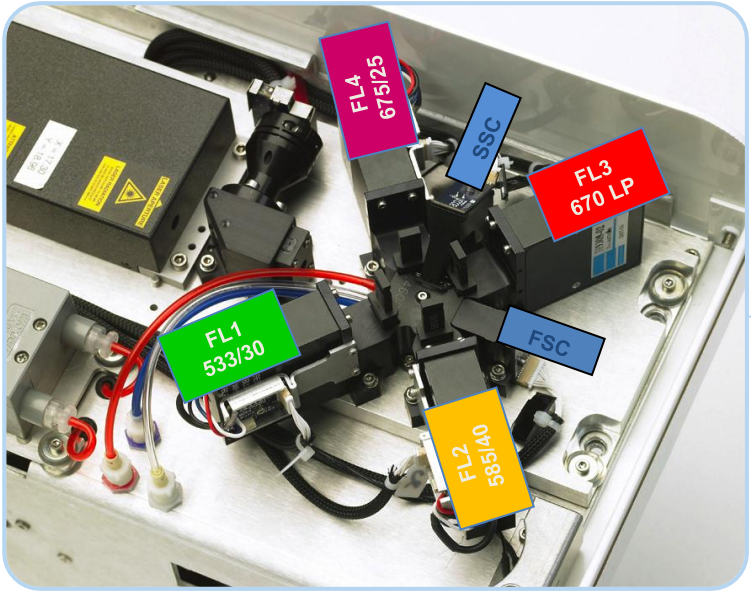
Optical system

488 nm
solid state laser

640 nm diode laser

PMTs for fluorescence
detection

Optical path



The BD Accuri™ C6 is Portable!

2nd Norwich Flow Day:
Institute for Food Research

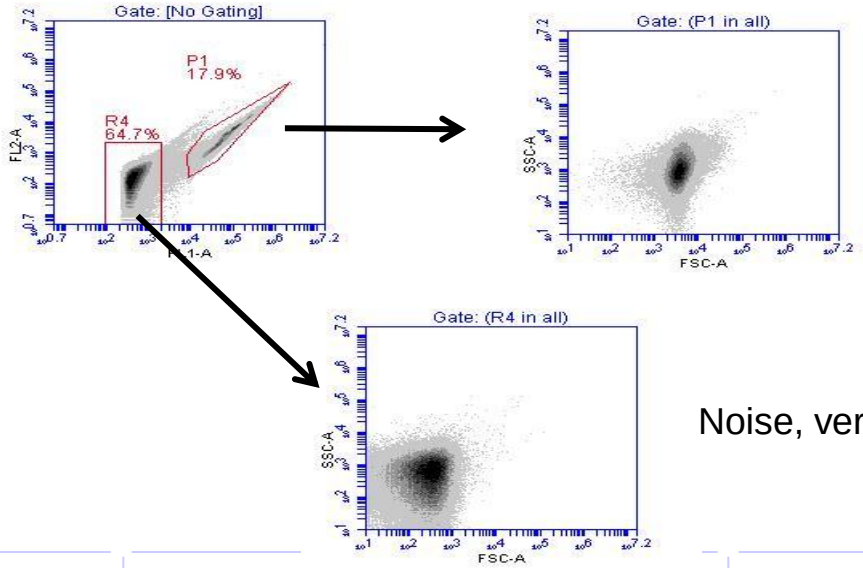
The Ecosystem Centre:
Research vessel, Palmer Peninsula, Antarctica

Applications

E. Coli in PBS + Syto BC

PBS spiked with E. Coli, plus Syto BC dye

Trigger on FL1, channel = 200



Scatter of Syto BC + e. coli

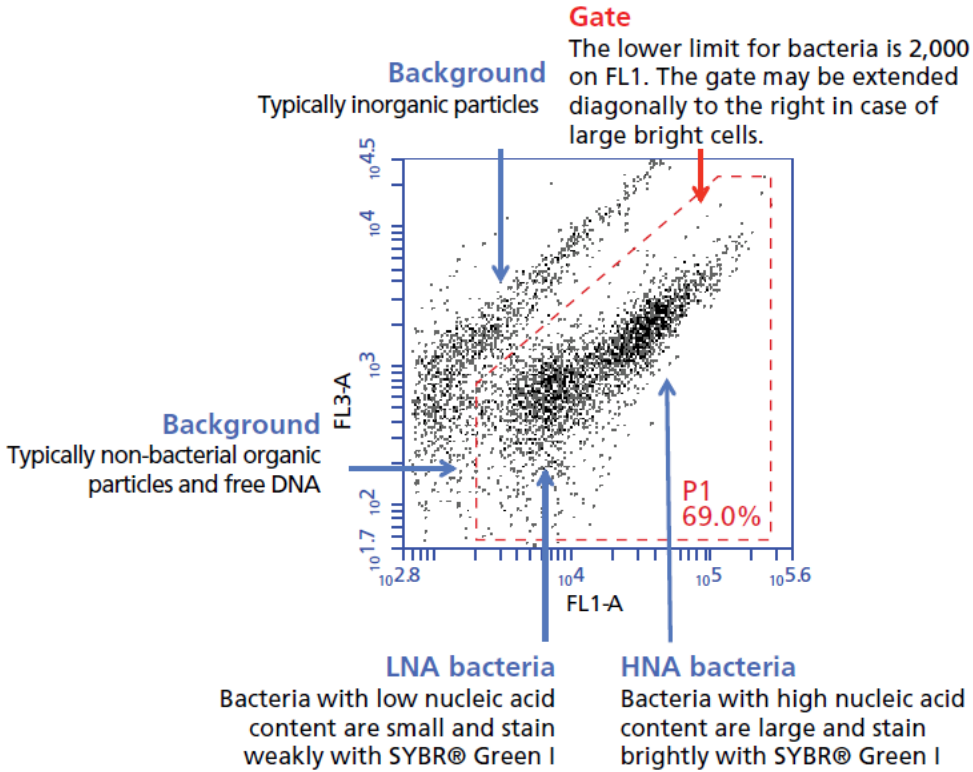
Noise, very small debris

E. Coli per uL sample:

events in P1 / uL collected

76,050/12.3uL = 6183 E. Coli

Water Quality Assessment (Eawag method)



Water Quality Assessment (Eawag method)

Sample Source	Concentration (cells/mL)	Fluorescence (Mean FL1-A)	Histogram Color
Tap water 1	60,000	23,498	
Tap water 2	217,000	31,326	
Tap water 3	271,000	21,030	
Surface water 1	611,000	19,313	
Surface water 2	309,000	35,687	
Ground water	37,000	17,123	
E. coli	37,000	83,423	

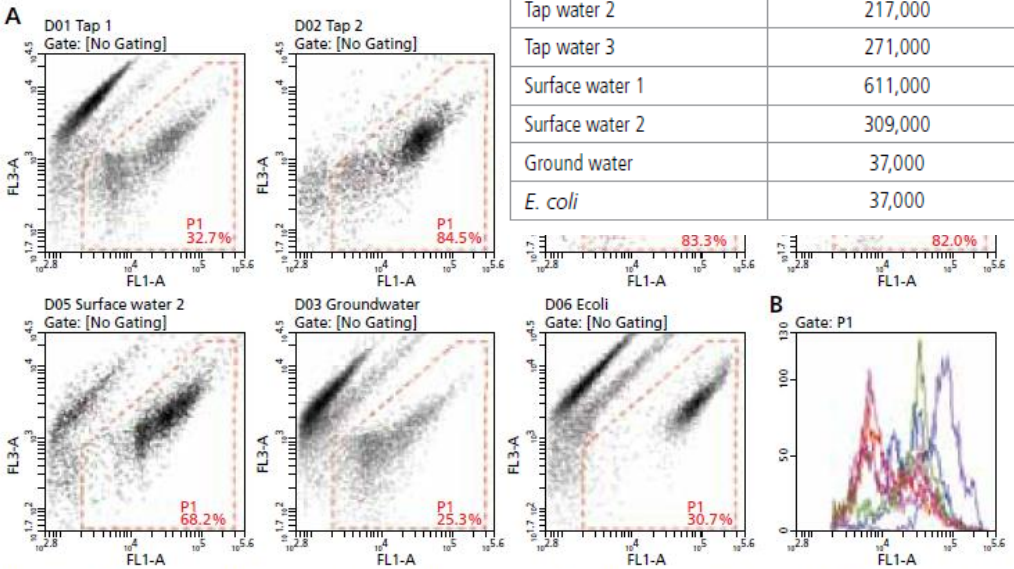
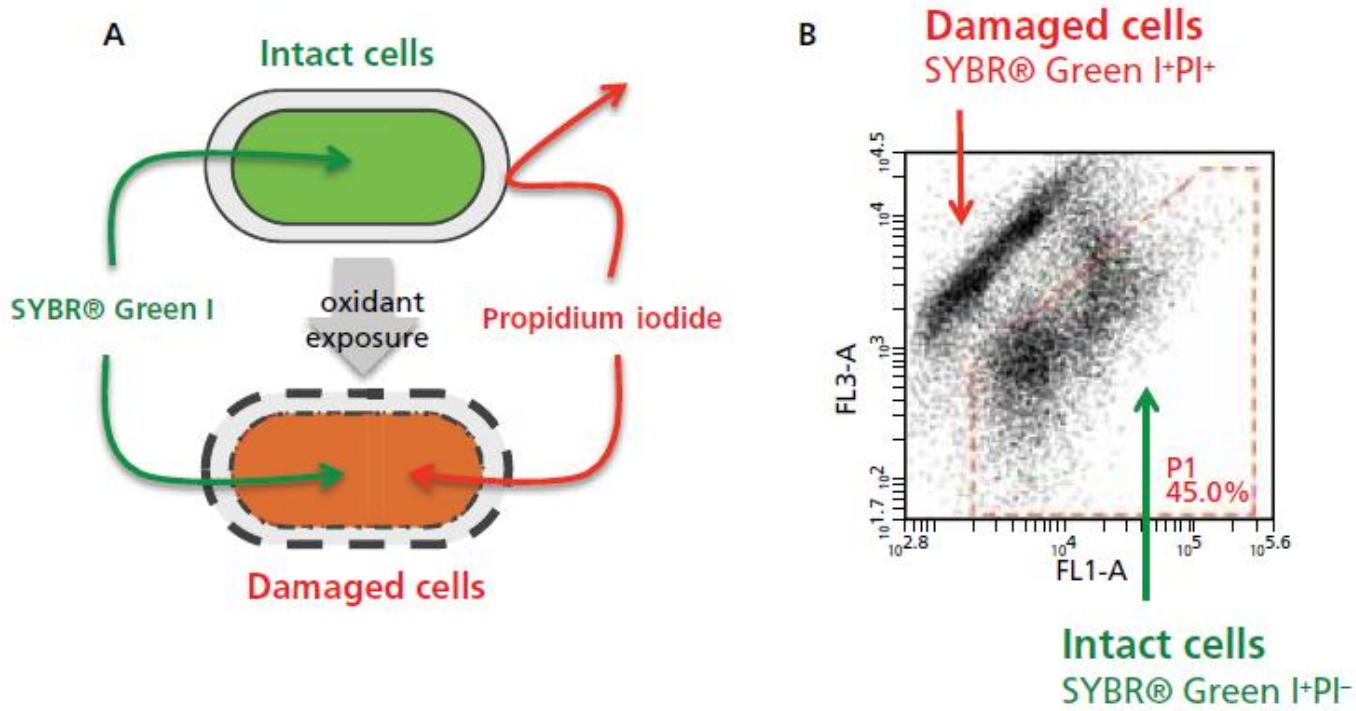
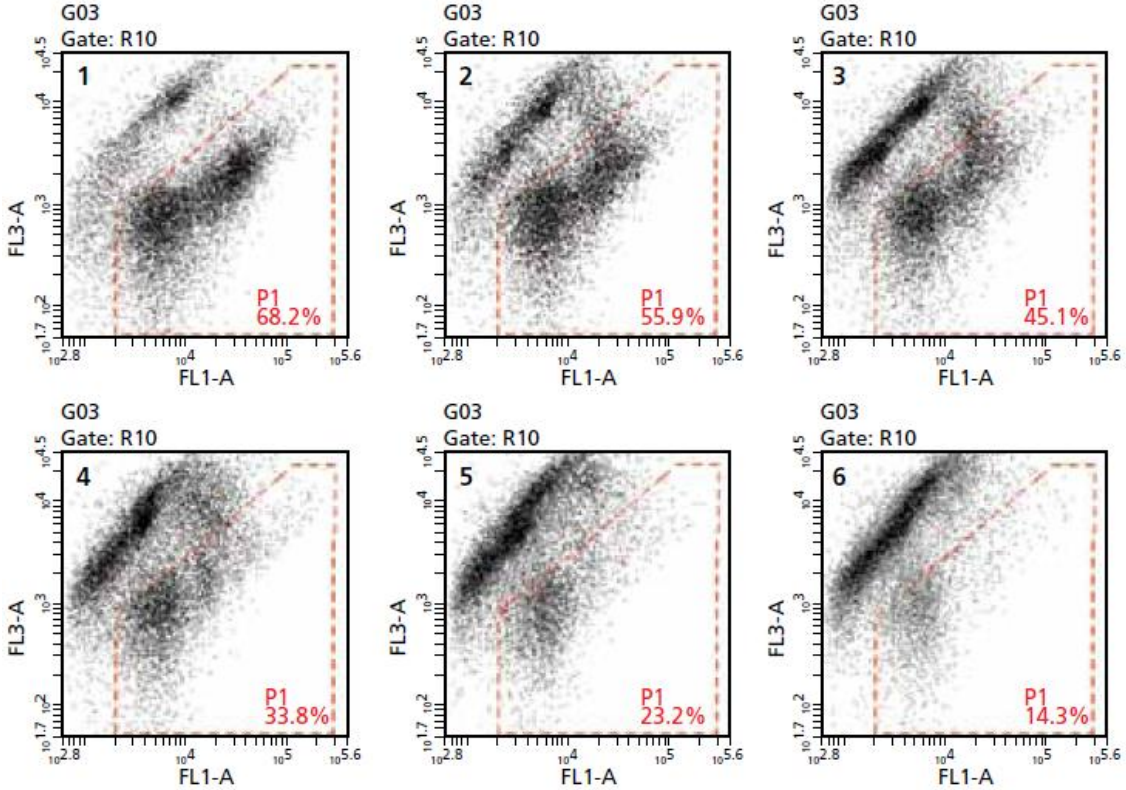


Figure 6. Water samples analyzed using the Eawag method and template on the BD Accuri C6.

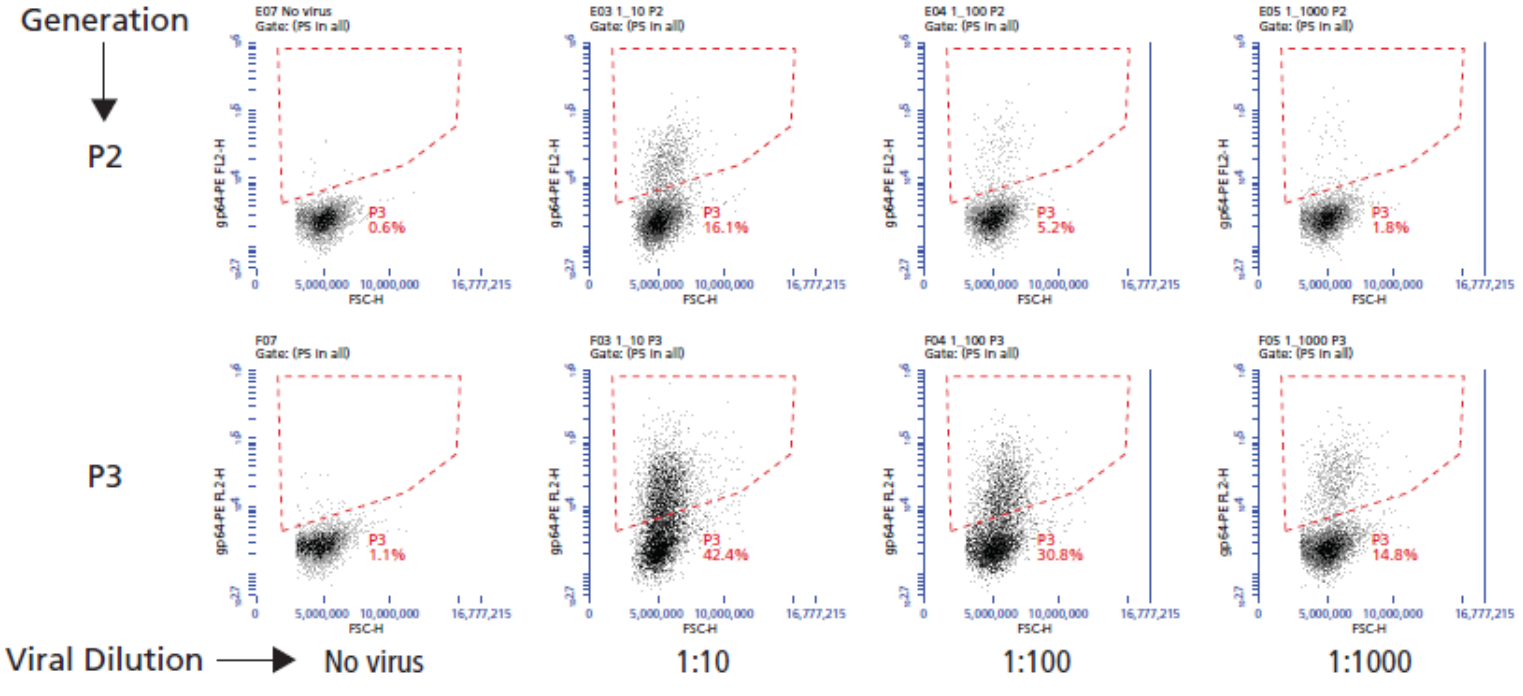
Water Quality Assessment (Eawag method)



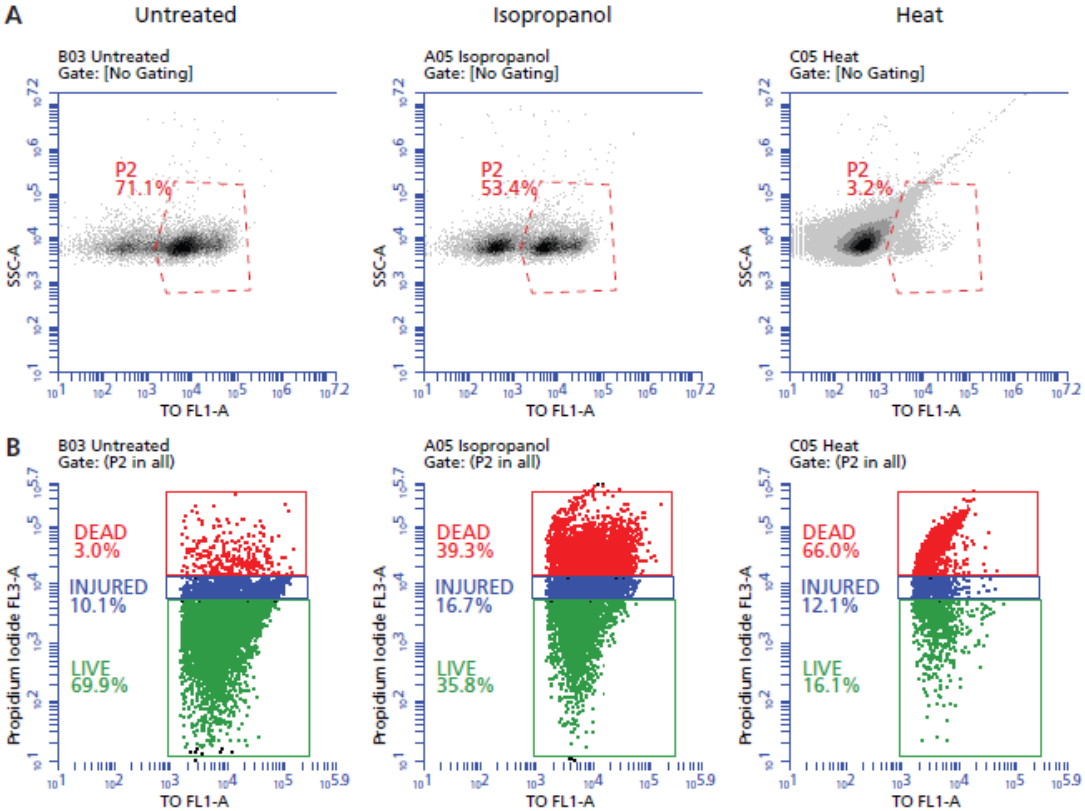
Water Quality Assessment (Eawag method)



Baculovirus Titration



E.Coli Viability Staining



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