

Novel methodologies for cellular analysis

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Part 1) Modern flow cytometric approaches

ACEA NovoCyte's expandable laser capabilities along with configurable optical detection design guarantee scientists the ability to advance research and to explore new applications in various areas of cellular analysis. **NovoCyte flow cytometer** provides a user friendly software interface enabling fast data acquisition and analysis of various flow cytometric applications. **NovoCyte Quanteon** is the answer for growing demands in modern flow-cytometry assays. With its four lasers (405, 488, 561, and 637nm) it brings up to 25 colour-assay. Each colour has its separate detector to avoid need for adjustments, making the data analysis even easier. The NovoSampler Q, which can be integrated into different laboratory automation platforms, efficiently processes both FACS tubes (using a 40-tube rack) and 24-, 48-, 96-, and 384-well plates. The intuitive NovoExpress software has been further advanced, providing an exceptional user experience in data acquisition, analysis and reporting. The benchtop flow cytometers from ACEA Biosciences offer high performance, modularity and ease of use.



Spectral flow cytometry incorporates a unique combination of patent-pending innovative technologies that takes flow cytometry to the next level of performance and flexibility. With three lasers, two scattering channels, and up to 48 fluorescence channels, **Cytek systems** suits every laboratory's needs, from simple to high-complexity applications. A paradigm shifting optical design provides unprecedented flexibility, enabling the use of a wide array of new fluorochrome combinations without reconfiguring your system for each application. The optics and state-of-the-art low-noise electronics provide excellent sensitivity and resolution.



Part 2) Live cell imaging under physiological conditions

Compared with fixed cell microscopy live-cell imaging increases, by at least a factor of 100, the information available to biologists, pharmacologists, and toxicologists on how stimuli affect the life and death of cells. Recent developments have improved sensitivity and upped the number of measurable parameters. The key driver for live-cell imaging is the rising popularity of kinetic research over fixed cellular analysis. Nowadays the most important feature for researchers is the ability to automate the incubation and image capturing of any live-cell analyzer. Incubation is a particularly thorny subject with since the value of scientists data is only as good as its relevance to physiological conditions. **The IncuCyte Live-Cell Analysis System** is the first real-time system that automatically captures and analyzes images of living cells around-the-clock for days, weeks, or months, while cells remain undisturbed inside a standard tissue culture incubator. **Etaluma Lumascope** inverted microscope constitute a dramatic new concept in solid-state optics with outstanding sensitivity, maximum resolution, and zero pixel shift. The compact, inverted design allow imaging in a wide range of labware and settings, including live cell imaging in incubators, hoods, and other challenging locations. The **CQ1 confocal quantitative image cytometer** enables 3D imaging and quantification of live cell clusters, such as spheroids within a 3D culture vessel, as they are, keeping the cells intact. System allows long-term monitoring under physiological conditions. A variety of information such as that about cell functions, intracellular signal transduction mechanisms, invasion regarding cell mobility, and morphology of cells can be obtained from the data quantified through image processing.

