Cedex

Cedex – The industrial standard

Cell count and cell viability are two of the most important parameters in cell culture related production and research. Traditionally these parameters are determined manually with the aid of a microscope and a hemacytometer after staining the cells with Trypan blue.

However, manual counting is known to be very time intensive, user dependent and thus not reliable.

The Cedex has automated the manual method in order to provide the user with more accurate and precise data about cell count, viability and additional valuable parameters within minutes.

Cedex key benefits:

- user independent and precise measurement of cell density and viability
- additional data about aggregation rates, cell diameter distribution and cell morphology
- very easy to use – no expert skills required
- huge time saving potential
- proven technology – over 600 systems in operation worldwide
- GMP validated and 21 CFR Part 11 compliant
- first choice for big pharma process development and production

Never count your cells manually again!

INNOVATIS

QUALITY THAT COUNTS

Quality that counts

innovatis AG, headquartered in Bielefeld, Germany, is specialized on integrating lab processes and automating cell culture analysis.

Based on proven technology our specialists offer the best range of product solutions for research, pharmaceutical and biotechnology industry – all over the world. Individual service packages complete the product portfolio dedicated to future customers' needs.

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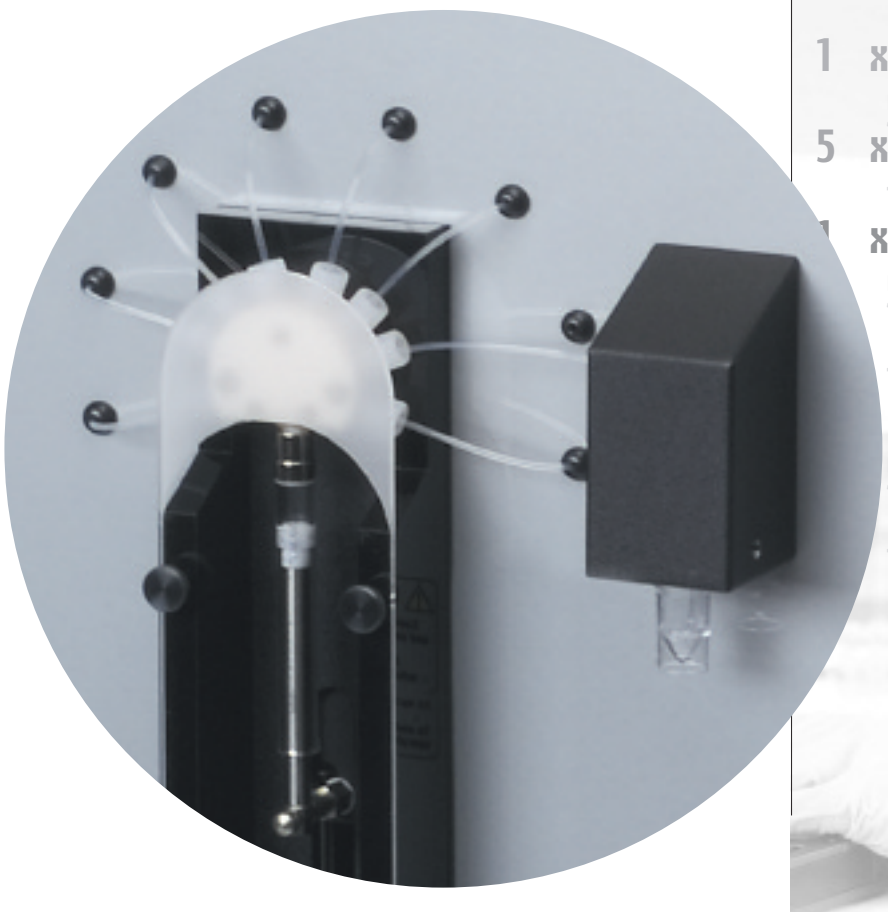
Cedex

MS20 C
MS20 T



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QUALITY THAT COUNTS

innovatis AG understands the importance of keeping lab processes operating at the optimum efficiency. We are committed to developing a longterm relationship with international customers by offering the best quality product for an excellent value. More than 600 existing systems in operation worldwide are increasing customer confidence in using technology ”made by innovatis AG”.

For best service and support, innovatis AG has a partner network that spans the world. With offices located in Europe, USA and Asia, you always will find a member of our team near you – ready to listen, prepared to respond and eager to show you the benefits of the Cedex system of innovatis AG.

The automation of cell analysis

Sample preparation, mixing and staining

After taking a sample of your cell suspension the Cedex automatically aspirates the cells and mixes and stains them with Trypan blue. This high degree of automation avoids deviations due to pipette handling and guarantees a high precision and reproducibility.

Replacing the hemacytometer

The system channels the stained cell suspension sample through the specially developed Cedex flow cell which is designed to equal a hemacytometer.

Rapid image acquisition

From the inside of the flow chamber images are taken from the stained sample.
Thereby the Cedex is analysing a sample volume that equals several times the volume of the hemacytometer method.
Thereby the statistical relevance of the data is dramatically enhanced compared to the manual approach.

Cutting edge image analysis

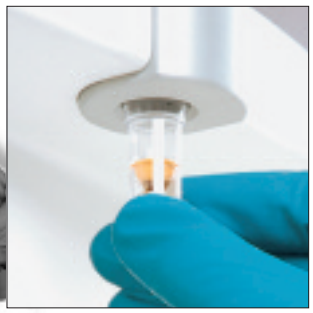
In contrast to the user dependent, tedious and time consuming manual optical counting method, the unique and powerful Cedex pattern recognition software detects, counts and analyses all viable and dead cells in the images and differentiates them from debris, protein clumps and other pollutions.
Thereby, the Cedex delivers a broad range of information about the cell sample:

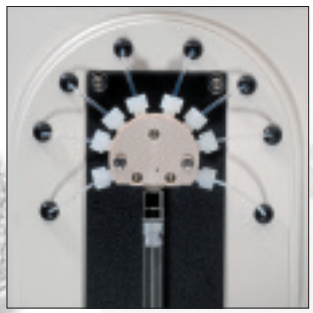
- overall, live and dead cell density
- viability
- cell diameter distribution and average diameter
- cell morphology and average compactness
- aggregation rates
- time course of cell density, viability …

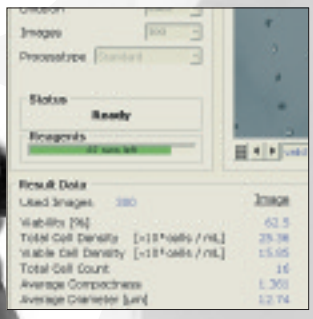
Fully automated numerical and graphical result representation

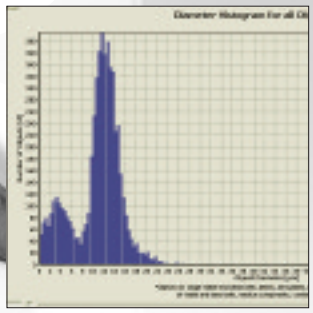
There is no more need for time consuming result calculations or manual documentation. Instead, all important parameters and charts are either displayed automatically or can be created easily within seconds.
All images, results, diagrams and graphics can be printed out as user definable reports. Alternatively they can be stored on a hard drive or CD ROM or be exported to any computer network.

Cedex technology









The Cedex technology is comfortably operated by means of an intuitive graphical user interface.

The acquired images as well as the corresponding image recognition results can be checked instantly after the measurement. The powerful image recognition software detects and analyses each individual cell for a couple of important parameters. Viable cells are marked with yellow circles and dead cells with red crosses.

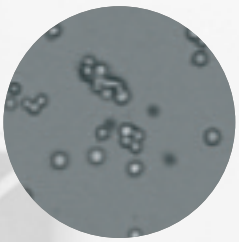
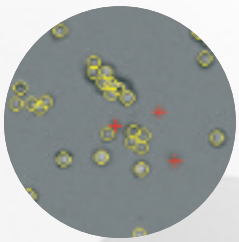
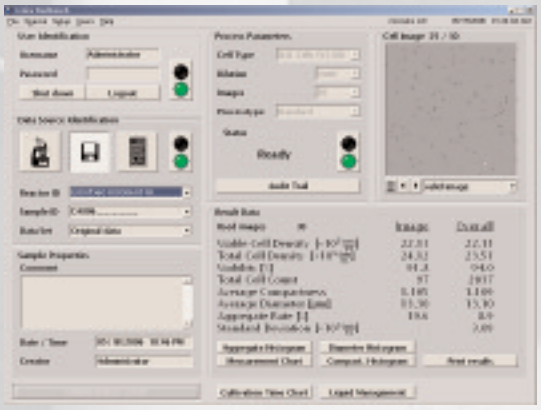


Image of stained cell sample



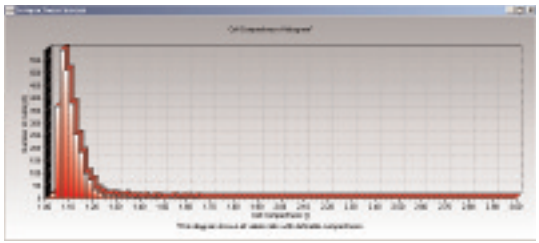
Overlay of image recognition results

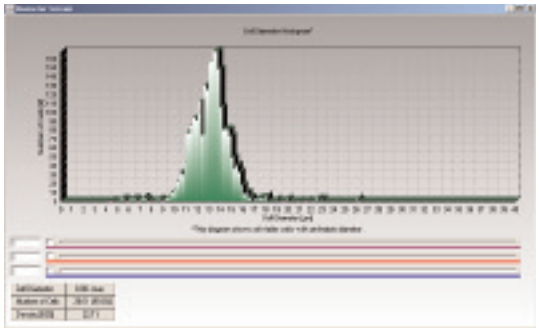
All features needed in routine operation are arranged in logical order and instantly accessible on the graphical user interface. All data can be monitored at a glance.



Get a fast overview of the most important cellular parameters within seconds due to the intuitve Cedex user interface.

The cell diameter and compactness (circularity) distributions of each analysed sample are displayed in the form of histograms, which allow to monitor and control the state of the cell culture.





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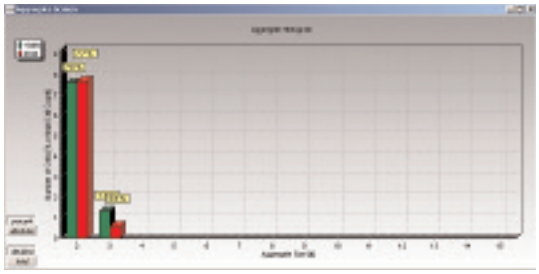
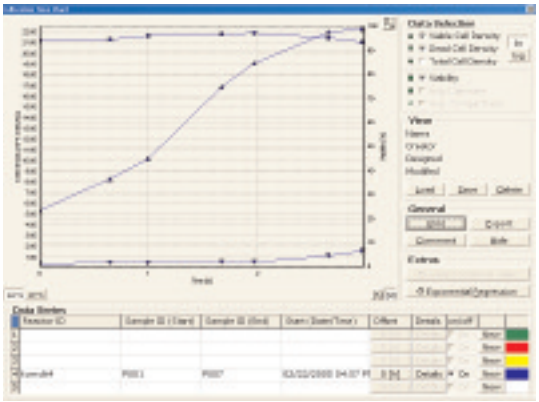
Detailed information about the number of cells in aggregates of different sizes is displayed in the "Aggregate Histogram".



Optimise and control cell cluster occurrence by using cell aggregation size histograms.

The "cultivation time chart" feature allows observing the development of several relevant parameters over time and comparing these parameters for several cell cultivations.



Analyse and compare different cultivation runs by creating time charts of important cellular parameters over time.

Optional Multi Sampler

Optional Multi Sampler MS20 C and T

The Multi Sampler MS20 is an accessory device for the Cedex system that can convey up to 20 samples in sequence to the Cedex measurement without the need for user interference. All samles are then automatically analyzed in succession. The use of a Multi Sampler increases the time and cost saving potential of the Cedex system even further and allows for a more structured routine lab work. These new products represent the future-proof choice for your Cedex system, regardless if you are an existing or new user.

Both samplers feature removable sample trays for easy and comfortable sample handling and a new and very fast x/y-sampling device that automatically delivers your samples to the Cedex analyser.

Cedex MS20 C

The **MS20 C** is the small and compact MS20 variant. No extra lab bench space is required because the MS20 C is easily mounted directly to the Cedex sample port.

Cedex MS20 T

The **MS20 T** is the bigger brother of the MS20 C. It is placed side by side to the Cedex system. It is the somewhat bigger design that allows the integration of larger water and waste containers replacing the corresponding Cedex reagent containers and thereby enabling a much higher number of measurements (up to 100) without the need of refilling the reagent containers.

If you would like to add the MS20 sampler of your choice to your existent Cedex you can order it as an upgrade kit that can be easily installed within minutes.

Service

- **Service and Support Hotline**
- **Service Contracts**
- **Preventive Maintenance Contracts**
- **Customer Trainings**
- **Certified Spare Parts and Consumables**
- **Application Workshops**

During years of experience with customers working inside the area of pharmaceutical production, innovatis AG has gathered a broad understanding of the strict requirements of users working inside regulated environments.
As more cell culture analysis systems are now being integrated in
GMP regulated production processes
innovatis AG has developed products and services for instrument validation with the intention to support our customers as much as possible in order to help them save time and costs during validation.

Innovatis AG offers a complete
GMP service package:

1. The complete and extensive set of documentation
2. Qualified consulting for the lining up process
3. Assistance regarding all aspects of Cedex validation

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