Technology that counts

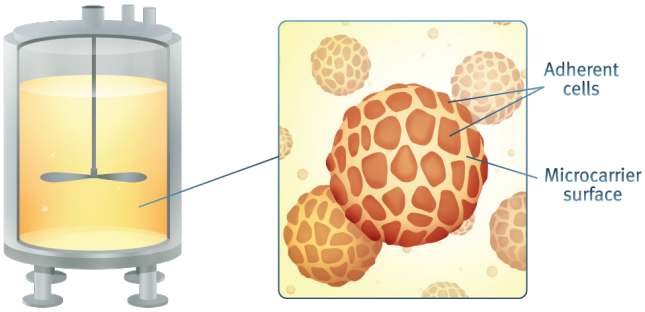
chemometec

NucleoCounting Microcarriers

Viability and Cell Count of Microcarrier Cultured Cells

Scaling up cell and virus production can be challenging. Cell culture flasks are not feasible for industrial scale production when thousand fold increases in production volume are needed.

Microcarriers offer a convenient method for growing adherent cells in bioreactors. Microcarriers serve as a scaffold that adherent cells can attach to, allowing them to proliferate while a bioreactor keeps the cell-microcarrier complex freely suspended in the media. Thus adherent cell lines are grown like suspension cells, thereby simplifiying scaling and allowing existing resources to be leveraged for process optimization and production.



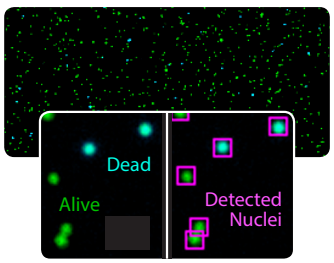
Microcarrier suspension

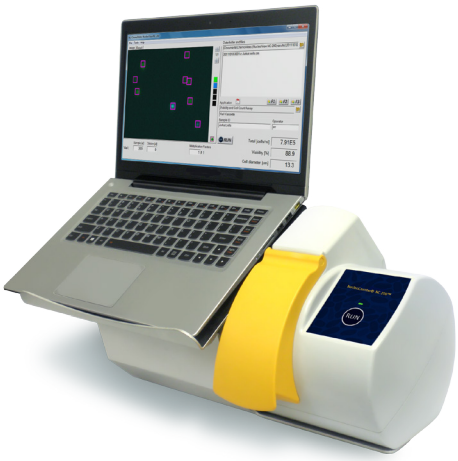
Cells grown on microcarrier

NucleoCounting

NucleoCounting is an accurate and reliable method for measuring cell count and viability in microcarrier cultures. The NucleoCounting method detects cells by fluorescent staining of cell nuclei. The cells are labelled with the fluorescent dye DAPI, which is highly specific to DNA, giving accurate detection of cell nuclei even in the presence of cellular debris.

Cell sampling, fluorescent staining, and counting chamber loading are combined into a single workflow by the unique Via1-Cassette™, which is loaded into a NucleoCounter® NC-200™ or NC-3000™ that calculates the total cell count and viability.





The NucleoCounter®
NC-200™

The Via1-Cassette™

NucleoCounting
Count cells intelligently.

Vaccine & Micro Carriers | Stem Cells | Cancer Cells | CEF Cells | Toxicology | *and more*

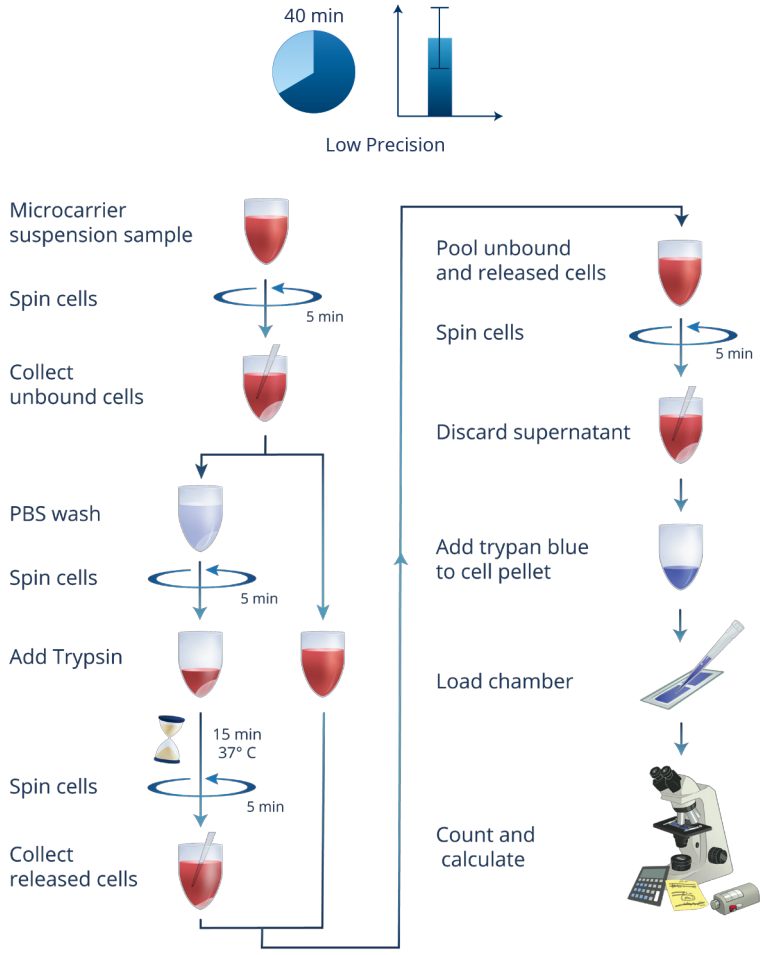
NucleoCounting Applications:

Microcarriers

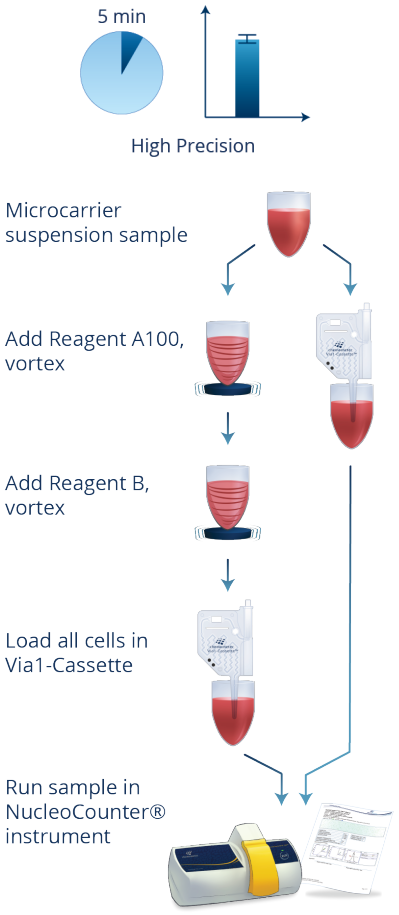
NucleoCounting saves time when counting cells in microcarrier cultures

Cell count and viability are crucial parameters when optimizing and monitoring large scale bioproduction. Cells grown on microcarriers have traditionally been counted using a multistep process that involves trypsin digestion and trypan blue staining. This method is both time consuming and inaccurate.

Traditional trypsin digestion and manual counting



The NucleoCounting method



A comparision of the traditional trypsin digestion method and the NucleoCounting workflow shows that the NucleoCounter® removes several centrifugation, pipetting and incubation steps. The entire cell counting process is completed in less than 5 minutes.

990-0209 ver. 1

For more information, please visit
www.chemometec.com/counting-cells-microcarriers/

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