

APPLICATION NOTE

CELL CULTURE MEDIA MANAGEMENT

Advanced
MicroFluidics
Innovative
automation solutions



WHAT ARE WE DOING?

Combining an SPM and an RVM, it is possible to create an automatic cell culture media management system.

At the input, different medias or components of medias are connected, so as to test the perfect media balance for your cells, or simply to renew/change the media automatically.

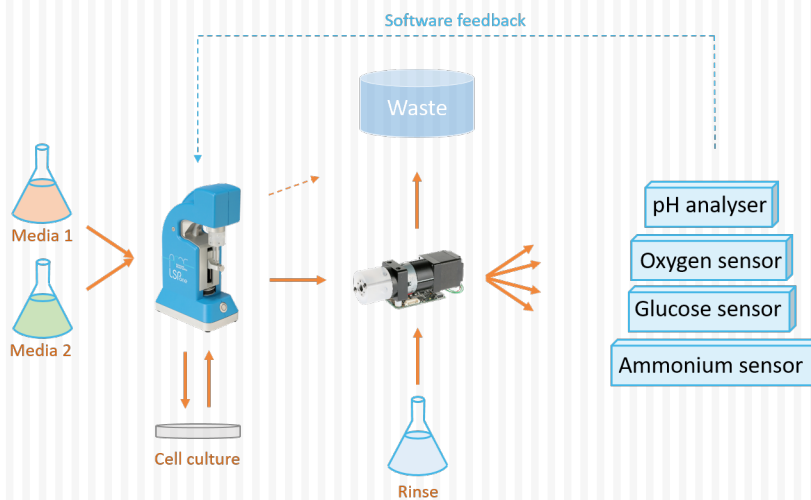
At the output, the media is either sent to waste, or through an analyser. This can be used as a simple monitor or, with feedback from the analyser, it could make an automatic system to have the perfect conditions for your cell growth at all times!

WHAT CAN BE MONITORED IN CELL MEDIA?

Many different parameters can be monitored in cell culture media, to guarantee the best growing parameters, or define the time to change the cells, such as:

- pH
- amino acids
- sugars
- vitamins
- nucleic acid components
- ...

SETUP



At the input:

Two medias, directly connected to the valve integrated in the pump. One rinse liquid, connected through the RVM. The cell culture dish.

At the output:

The cell culture dish, connected to the pump. Various analysers, multiplexed by the RVM. A waste recipient to avoid contamination.

In blue:

Possible feedback loop(s)

The setup can be completely adapted to the particular cells that you use.

TYPICAL VALUES IN MAMMALIAN CELL CULTURES

In this setup, it has been chosen to monitor 4 parameters: pH, oxygen, glucose and ammonium.

The goal values for each of these parameters depends on the cell that is being grown. Nevertheless, here is the order of magnitude for mammalian cells for each parameter:

- pH: ~7
- oxygen: ~1-350 mol/cell/s
- glucose: ~1250 mg/L
- ammonium: ~1.2-60 mM

WHAT'S IN IT FOR YOU?

- No need to come during the weekend to nourish your cells!
- Create the perfect media for all your cell types
- Constantly monitor and modify your media
- Repeat the exact same sequence on different dishes
- Affordable automated system

CONTACT US FOR MORE INFORMATION

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