



HOW DOES IT WORK?

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How Does XF Technology Work?

No Labels, Washes or Suspended Cells Required

XF stands for eXtracellular Flux

Seahorse Bioscience engineers and scientists accepted a challenge from our partners in drug discovery-- to develop a totally non-invasive method of profiling the physiological behavior of cells, in a manner that is fast, multi-parametric, and easy to use.

We have met this challenge using a novel approach. While most assays involve the addition of a colorimetric, fluorescent, or radiometric reporter, ours does not. Our XF technology monitors the effects of cellular metabolism and signaling on the extracellular microenvironment, using multiple non-invasive readouts.

Non-invasive assays can be repeated many times, and this is true for our XF technology. We are currently exploring the unique and powerful added dimension of time with our science partners-- the results are often surprising!

As a result of a series of novel inventions, we believe that our technology has exceeded the performance of any previous non-invasive metabolic readout. Measurements of cellular metabolism, from one well to the next, one plate to the next, or one day to the next, typically produce c.v.'s if less than 20%. Measurements of the change in cellular behavior as a result of drug addition typically produce c.v.'s of less than 10%. Changes of as little as 5% can often be seen with replicate wells.

We have also been attentive to the needs of our partners in the drug discovery laboratory. Our CellDoctor instruments based on XF technology are fast- assay times are in minutes. To control bacterial growth, all components that contact cells or media are low cost disposable items. Standard tissue culture microplates may be used, and semi-confluent monolayers of adherent cells are sufficient.

The CellDoctor instrument fits on a bench top, requires only standard power connections, and can be operated with minimal training. Plates can be loaded manually, or a robotic plate handler and fluidics system can be used to develop automated assay protocols.

Contact us to learn more about the XF technology.

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