

Press Release

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Measure Cells' Fuel Dependency and Flexibility in a Single Assay

Seahorse Bioscience Introduces the Seahorse XF Mito Fuel Flex Test Kit

Seahorse Bioscience, the world leader in tools for cell metabolism research, introduces the Seahorse XF Mito Fuel Flex Test Kits for XFp and Seahorse XFe Analyzers. Taking less than two hours the test enables a unique measure of the dependency, capacity and flexibility of cells to oxidize three critical mitochondrial fuels: glucose, glutamine, or fatty acids. This can only be accomplished in the context of a living cell capable of switching from one mitochondrial fuel to the next in real time.

Cells oxidize glucose, glutamine and fatty acids at different rates in the mitochondria to control a wide variety of biological processes, including energy production, proliferation, activation and differentiation. A single injection reveals dependency, a measure of the cells' reliance on a particular fuel pathway for respiration. Injection of a combination of compounds measures cells' flexibility in meeting metabolic demand. Flexibility indicates that the cells have the ability to compensate for the inhibited pathway(s) by using an alternative fuel pathway for energy production.

With this information researchers can now:

- Identify fuel dependencies to uncover cancer cell vulnerabilities.
- Explore how fuel preferences lead to cell fate decisions for differentiation and immune cell activation.
- Determine whether/how cells can adjust fuel oxidation to match nutrient availability while meeting energy demand.

The new XF Mito Fuel Flex Test provides a rapid, label-free solution for studying substrate metabolism. Now, researcher can measure both, fuel pathway preferences and compensation, by modulating all three pathways in one single assay.

With a better understanding of the connection of physiological traits of cells with genomic and proteomic data, scientists are generating new insights into metabolic function, leading to a greater understanding, and new treatments of disease. There are now over 2,000 references to Seahorse XF technology in published articles in leading scientific journals. Seahorse XF technology and XF test kits have set the standard in the measurement of cell metabolism, enabling scientists worldwide to advance their research in neurodegeneration, aging, cancer, cardiovascular, cell physiology, toxicology and hepatobiology, immunology, infectious diseases, mitochondrial diseases, model organisms, obesity, diabetes, metabolic disorders, screening and translational medicine.

Please contact us for detailed information!

Bucher Biotec AG

Viaduktstrasse 42
4051 Basel

Tel.: 061 269 1111

Email: info@bucher.ch
www: <http://www.bucher.ch>

