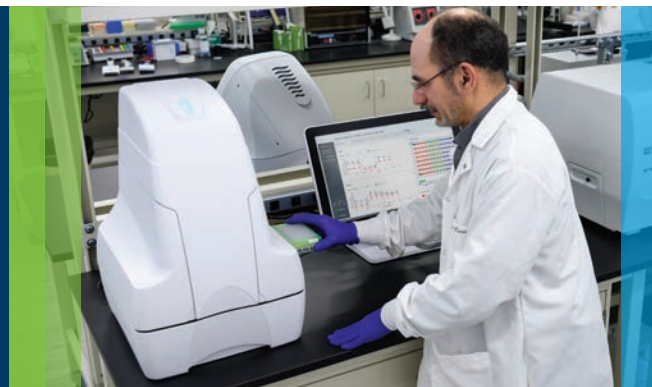


A Direct Measurement for Accurate Identification of Mitochondrial Toxicity

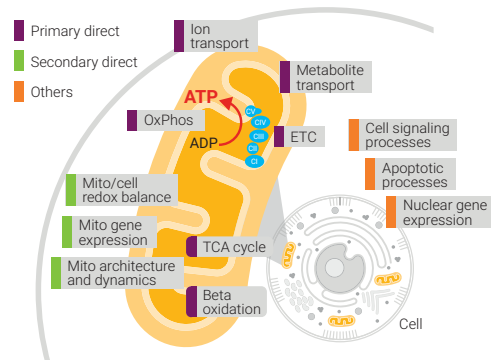
Agilent Seahorse XF technology



Standardized Agilent XF mito tox solution for assessing drug-induced mitochondrial toxicity

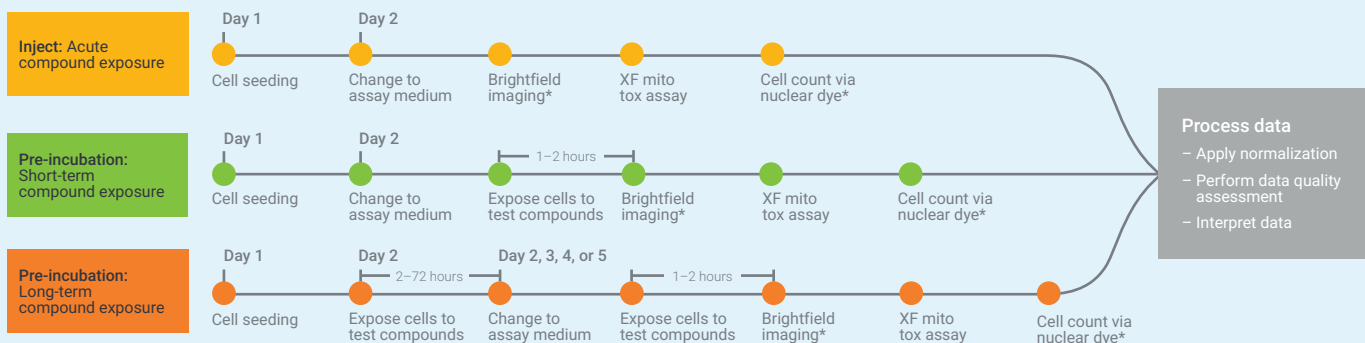
Mitochondrial toxicity (mito tox) is a common issue with therapeutic development, contributing to drug candidate attrition and post-market drug withdrawals. Among the methods used to assess drug-induced mitochondrial toxicity in drug discovery, direct measurement of mitochondrial oxygen consumption using the Agilent Seahorse XF technology has been well documented as a specific and sensitive marker/indicator.

Agilent now offers a standardized XF solution that allows for assessment of compounds exhibiting mitochondrial toxicity. This solution incorporates several new and improved elements, including the XF Pro analyzer, XF Mito Tox Assay kit, XF Pro M assay plate, and software. The XF Pro analyzer has several novel design features that provide enhanced sensitivity, precision, and consistency for OCR (oxygen consumption rate) measurements. The XF Mito Tox Assay kit contains validated reagents and features a streamlined workflow, supported primarily by Wave Pro and Seahorse Analytics software tools, for assay design, performance, data quality assessment, and data interpretation/visualization. In addition, when implemented, the XF Pro M assay plate—designed to minimize edge effects—can reduce well-to-well signal variation. Altogether, this standardized XF mito tox solution allows users to obtain robust results and actionable conclusions quickly and eliminate assay development needs.



Key mitochondrial pathways and processes that may be potential targets of drug-induced mitochondrial toxicity.

Streamlined workflows for investigating short-term and long-term compound effect

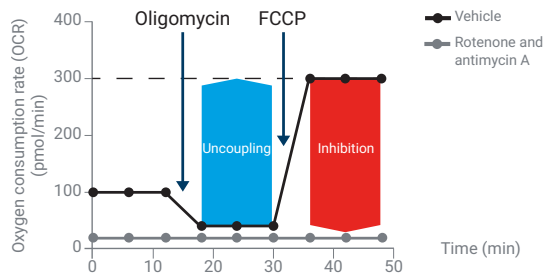


The flowchart outlines the use of the Seahorse XF Mito Tox Assay kit to investigate drug-induced mitochondrial toxicity, illustrating where acute, short-term or long-term compound exposures may be performed to assess impairment effects to mitochondrial function and potential mitochondrial toxicity.

*Brightfield imaging and cell count enabled by XF-compatible BioTek Cytation Normalization Solution.

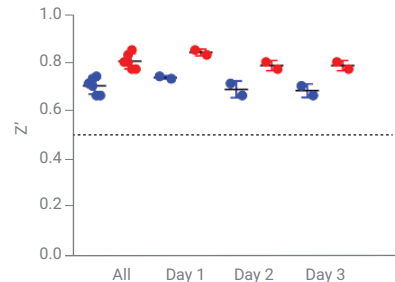
Key features and benefits of the XF mito tox solution

Simplified assay design and parameters to accurately identify mitochondrial toxicants



Seahorse XF mito tox assay profile showing the respiration parameters used for assessing the type and magnitude of mitochondrial toxicity.

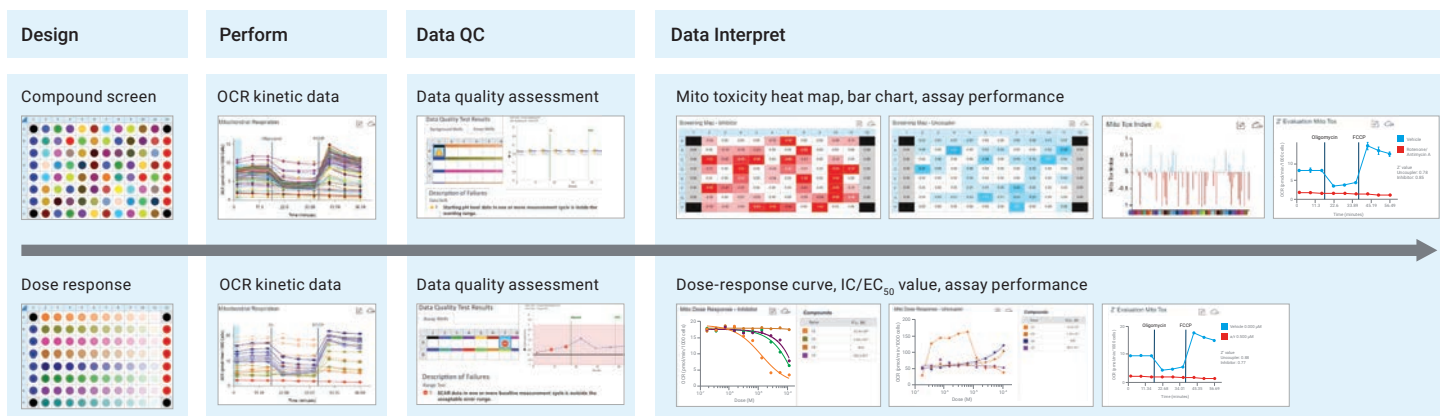
Reliable and robust assay performance to drive confidence in results and decision making



Assessment of XF mito tox assay performance using Z' values for uncoupling and inhibition parameters (three replicate assays performed on different days).

Enhanced software tools to deliver an end-to-end solution for assessing drug-induced mitochondrial toxicity

Software is an integral part of the XF mito tox solution. Wave Pro, a desktop software, provides design features to simplify assay setup of compound screening and dose-response assays. It is also used to assess data quality to ensure that assay artifacts do not influence reported data and builds confidence in conclusions. Seahorse Analytics, a web-based software tool, can transform XF mito tox kinetic data into standardized mito tox parameters. These software features greatly simplify the entire XF assay experience, from assay design to data interpretation, facilitating decision-making in the context of drug discovery and development.



The complete XF mito tox assay solution. Enhancements to software for assay design, performance, data quality assessment, and interpretation provide a streamlined and standardized method and data analysis experience for identification of mitochondrial toxicity.

Learn more.

www.agilent.com/chem/discoverxf

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