Metabolic Analysis of Matrix-Embedded Organoids Using the Agilent Seahorse XF Flex

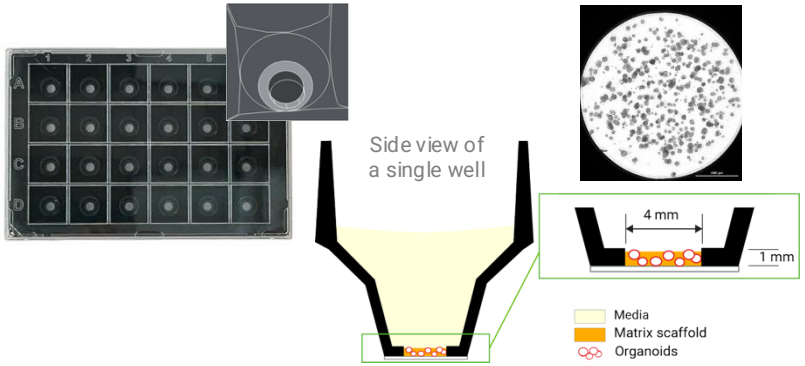
The Agilent Seahorse XF Flex organoid workflow enables metabolic profiling of scaffold-embedded organoids using the Agilent Seahorse XF Flex analyzer and Agilent Seahorse XF organoid microplate.

This provides key indicators of mitochondrial health, glycolysis, and overall cellular (dys)function in physiologically relevant model systems.

Seahorse XF Flex analyzer

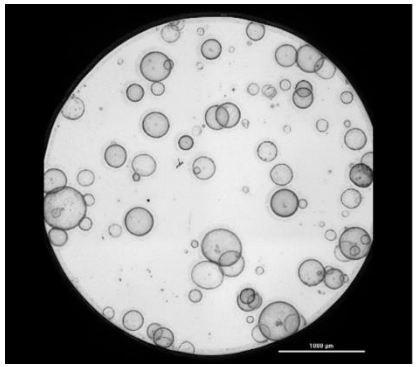
Seahorse XF Flex organoid microplate

Seahorse XF 3D Mito Stress Test kit



Prepare samples: Organoids can be cultured in the Seahorse XF Flex organoid microplate from in vitro-derived cells or organoids or isolated directly from organisms/biopsy material.

4x Brightfield



4x Fluorescence (Hoechst)

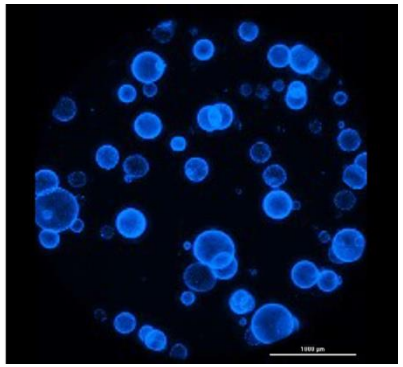
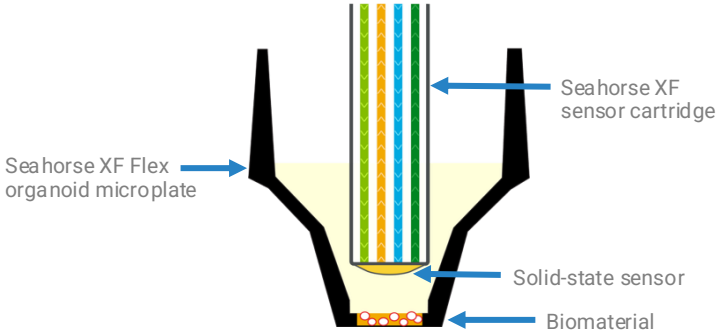


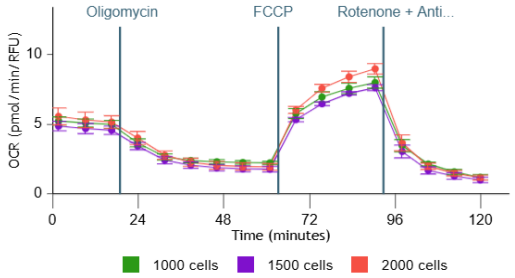
Image organoid culture: Mouse hepatic organoids cultured in the XF organoid microplate and whole wells are imaged in brightfield and fluorescence on the Agilent BioTek Cytation system.

Side view of a single well

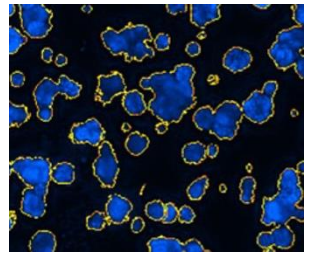


Prepare your XF assay: Resuspend reagents from the Seahorse XF 3D Mito Stress Test kit, optimized for complex 3D systems. Load them into XF sensor cartridge and begin your XF assay.

XF assay data



4x Fluorescence (Hoechst)



Measure and analyze: XF assay data from HCT116-H2B-GFP organoid cultures at various seeding densities. Oxygen consumption rates (OCR) were normalized to the mean-integral intensity via Z-projected image analysis in the Agilent BioTek Gen5 software.

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