

# Metabolic Analysis in 3-Dimensions

XFe96 Spheroid FluxPak  
XFe96 Spheroid Microplate  
XFe96 Spheroid Plate

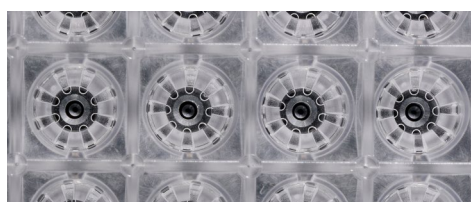
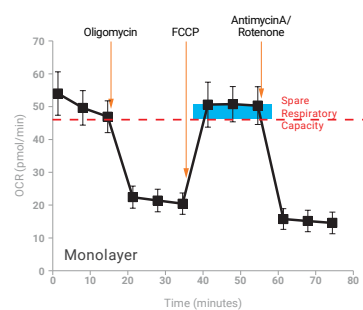
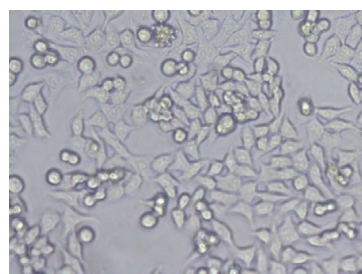
## Functional metabolic measurements from 3-dimensional *in vitro* spheroids

The innovative geometry of the XFe96 Spheroid Microplate enables you to assay individual 3-dimensional spheroids with your XFe96 Analyzer.

### The XFe96 Spheroid Microplate provides:

- Real-time, functional, metabolic data from individual spheroids.
- Sensitive and reproducible measurements of respiration and glycolysis.
- A robust method to assay spheroids in a standard 96-well format.

### 2-D Culture



Spheroid Microplate

### 3-D Culture

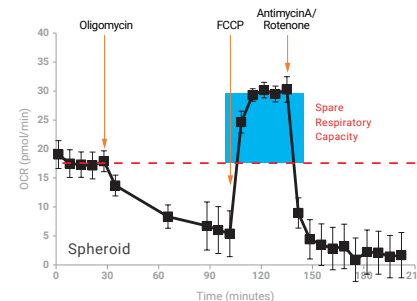
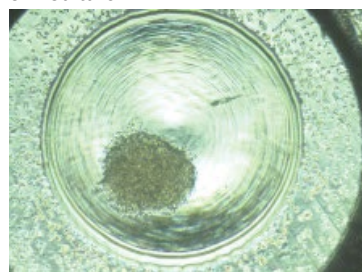
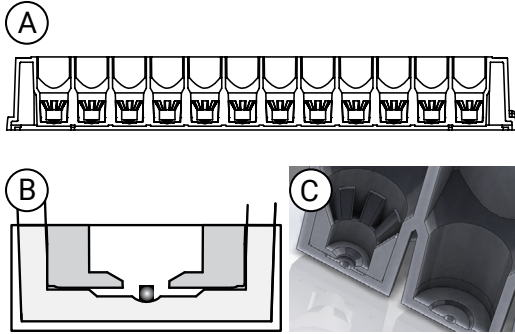


Figure 1. Assessing aerobic metabolism in 3-D Cultures

The XFe96 Spheroid Microplate gives you the ability to look at the two major metabolic pathways in the cell: respiration and glycolysis. Here, we used the XF Cell Mito Stress Test to assess mitochondrial function of HCT116 colon carcinoma cells. Compared to cells grown as a 2-D monolayer, the spheroids have a dramatically increased spare respiratory capacity. This is consistent with a shift from the highly proliferative nature of 2-D cell culture to the 3-D state where nutrient supply gradients contribute to balanced proliferation, differentiation, and cell death. The metabolic requirements of these cells are notably different, contributing to the difference observed in spare respiratory capacity.

## Enabling Metabolic Analysis of 3-D Cultures

The innovative shape of the XFe96 Spheroid Microplate enables the measurement of individual spheroids. The unique geometry is designed to correctly position the sample under the sensor for maximum sensitivity, and ensure that the medium is adequately mixed.



This schematic illustrates:

- A. The unique geometry of the XFe96 Spheroid Microplate.
- B. The correct position of the spheroid at the bottom of the well. The XFe96 Spheroid Microplate is designed to hold spheroids between 200 and 500  $\mu\text{m}$  in diameter.
- C. The venting system that allows for optimal media mixing around each spheroid.

## Ordering Information



Product	XFe96 Spheroid FluxPak
Part #	102905-100
Contents	6 XFe96 Cartridges 6 XFe96 Spheroid Microplates 1 Bottle XF Calibrant
Shipping	Ships at ambient temperature

Product	XFe96 Spheroid Microplates
Part #	102978-100
Contents	6 XFe96 Spheroid Microplate
Shipping	Ships at ambient temperature

Product	XFe96 Spheroid Microplate
Part #	102959-100
Contents	1 XFe96 Spheroid Microplate
Shipping	Ships at ambient temperature

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