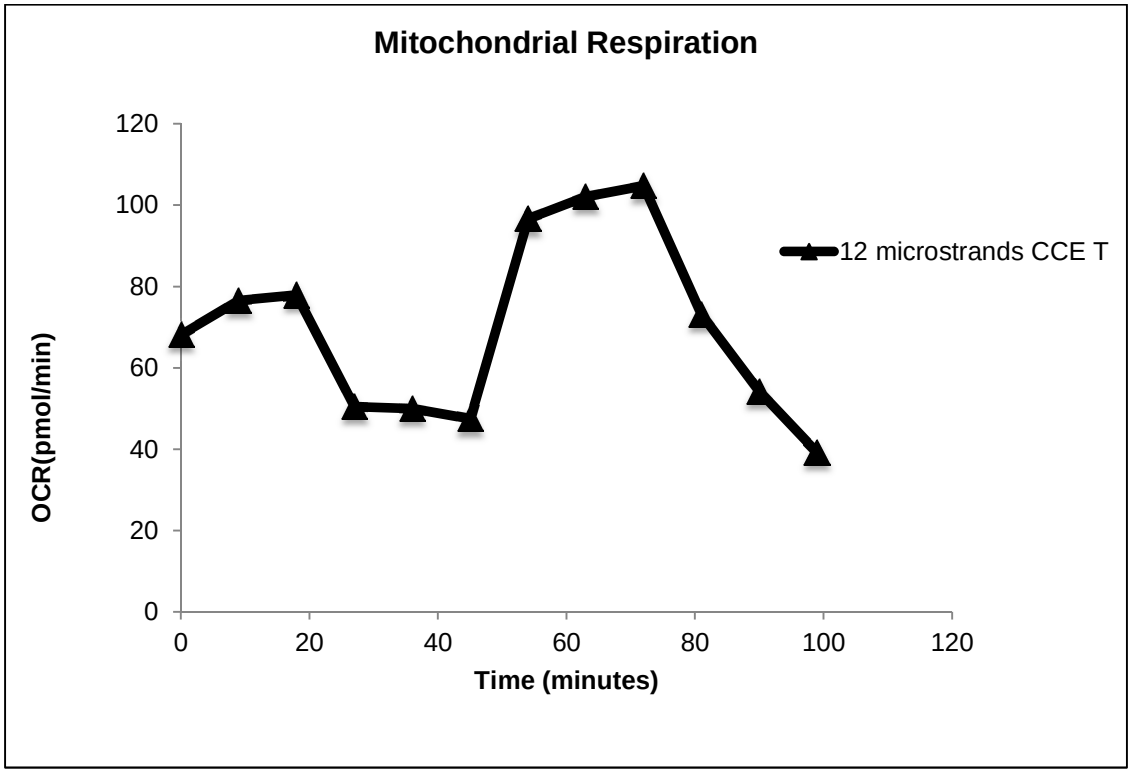
Supplemental Information

Materials and Methods

Mitochondrial activity analysis of "Brown-Fat-in-Microstrands"

The XF Extracellular Flux Analyzer ($XF24^3$ model, Seahorse Bioscience, North Billerica, MA) was used to measure the oxygen consumption rate (OCR). After differentiation for 30 days, "Brown-Fat-in-Microstrands" were sliced into 12 of 1.5 mm pieces to cover the whole plate and placed in a Seahorse 24-well Islet Capture Microplate. All cells were incubated in XF assay medium in a non-CO_2 incubator for at least 30 minutes while XF Mito Stress Test drugs (Seahorse Bioscience) were loaded. The Extracellular Flux analysis and the Mito Stress Test were carried out as follows. Briefly, 1 μM oligomycin, 3.3 μM of FCCP, and 1 μM antimycin A were sequentially added to cells following the establishment of basal OCR readings to determine ATP-dependent OCR, maximal OCR and non-mitochondrial respiration, respectively. Three OCR readings were obtained following the addition of each drug.



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924 Figure S1. Mitochondrial respiration of “Brown-Fat-in-Microstrands”.