

Materials List for:

High-resolution Respirometry to Measure Mitochondrial Function of Intact Beta Cells in the Presence of Natural Compounds

Kyle B. Kener¹, Devin J. Munk¹, Chad R. Hancock¹, Jeffery S. Tessem¹

¹Nutrition, Dietetics and Food Science Department, Brigham Young University

Correspondence to: Jeffery S. Tessem at jeffery_tessem@byu.edu

URL: <https://www.jove.com/video/57053>

DOI: [doi:10.3791/57053](https://doi.org/10.3791/57053)

Materials

Name	Company	Catalog Number	Comments
O2k Core: Oxygraph-2k	Oroboros Instruments	10000-02	Instrument for high-resolution respirometry
DatLab 6 Program	Oroboros Instruments	27141-01	Computer program for analysing high-resolution respirometry
INS-1 832/13 cell line	Duke University Medical Center	NONE	Beta cell line, gift from Dr. Christopher Newgard
Curcumin	Sigma	C7727	Pre-treatment of beta cells
Cocoa epicatechin monomer	Virginia Polytechnic Institute and State University	NONE	Pre-treatment of beta cells, gift from Dr. Andrew Neilson
Trypsin	Sigma	T4049	For cell culture
RPMI-1640	Sigma	R8758	832/13 beta cell media
Fetal Bovine Serum	Hyclone	SH30071.03	832/13 beta cell media component
Penicillin-streptomycin	Sigma	P4458	832/13 beta cell media component
HEPES	Sigma	H3662	832/13 beta cell media component/ 1x SAB Buffer
Glutamine	Caisson	GLL01	832/13 beta cell media component
Sodium Pyruvate	Sigma	S8636	832/13 beta cell media component
2-Mercaptoethanol	Sigma	M3148	832/13 beta cell media component
NaCl	Fisher	S271	Component of 10x SAB buffer
KCl	Sigma	P9541	Component of 10x SAB buffer
KH ₂ PO ₄	Sigma	P5655	Component of 10x SAB buffer
MgSO ₄	Sigma	M2643	Component of 10x SAB buffer
D-(+)-Glucose Solution	Sigma	G8769	Component of 1x SAB buffer, chemical for respiration assay
CaCl ₂	Sigma	C5670	Component of 1x SAB buffer
35% BSA Solution	Sigma	A7979	Component of 1x SAB buffer
NaHCO ₃	Sigma	S5761	Component of 1x SAB buffer
200 proof ethanol	Sigma	459844	Washing Oxygraph O2k Chambers
Oligomycin A	Sigma	O4876	Chemicals for respiration assay
FCCP	Sigma	C2920	Chemicals for respiration assay
Anitmycin A	Sigma	A8674	Chemicals for respiration assay
BCA Protein Kit	Thermo Fisher	23225	For determining protein concentration