

# Extracellular Glucose Depletion as an Indirect Measure of Glucose Uptake in Cells and Tissues *Ex Vivo*

 Shashi Bhushan Kumar<sup>1</sup>, Shanvanth Arnipalli<sup>1</sup>, Adham Abushukur<sup>1</sup>, Silvia Carrau<sup>1</sup>, Priyanka Mehta<sup>1</sup>, Ouliana Ziouzenkova<sup>1</sup>
<sup>1</sup>Department of Human Sciences, The Ohio State University

## Corresponding Author

 Ouliana Ziouzenkova  
 ziouzenkova.1@osu.edu

## Citation

 Kumar, S.B., Arnipalli, S., Abushukur, A., Carrau, S., Mehta, P., Ziouzenkova, O. Extracellular Glucose Depletion as an Indirect Measure of Glucose Uptake in Cells and Tissues *Ex Vivo*. *J. Vis. Exp.* (182), e63681, doi:10.3791/63681 (2022).

## Date Published

April 6, 2022

## DOI

10.3791/63681

## URL

jove.com/video/63681

## Materials

Name	Company	Catalog Number	Comments
3T3-L1 mouse fibroblasts	ATCC	CL-173	Cell line
96-well plates	Falcon	353227	Plastic ware
B6.V-Lepob/J male mice	Jackson Laboratory	stock number 000632	Mice
BioTek Synergy H1 modular multimode microplate reader (Fisher Scientific, US)	Fisher Scientific, US	B-SHT	Device
Bovine serum	Gibco/ThermoFisher	161790-060	Cell culture
Calf serum	Gibco/ThermoFisher	26010-066	Cell culture
Cell incubator	Forma	Series II Water Jacket	Device
Diet (mouse/rat diet, irradiated)	Envigo	Teklad LM-485	Diet
Dimethylsulfoxide (DMSO)	Sigma LifeScience	D2650-100mL	Reagent
Dulbecco's Modified Eagle Medium	Gibco/ThermoFisher	11965-092	Cell culture
Ethanol	Sigma Aldrich	E7023-500mL	Reagent
Fluorescent 2-deoxy-2-[(7-nitro-2,1,3-benzoxadiazol-4-yl) amino]-D-glucose)	Sigma	72987-1MG	Assay
Glucose-free and phenol red-free DMEM	Gibco/ThermoFisher	A14430-01	Cell culture
Human insulin 10 mg/mL	MilliporeSigma, Cat N 91077C	Cat N 91077C	Reagent
Isoflurane, 5%	Henry Schein	NDC 11695-6776-2	Anesthaetic
Penicillin/streptomycin (P/S)	Gibco/ThermoFisher	15140-122	Cell culture
Phosphate buffered solution	Sigma-Aldrich	DA537-500 mL	Cell culture
Pierce bicinchoninic acid (BCA) protein assay	ThermoFisher	Cat N23225	Assay
Radioimmunoprecipitation assay lysis buffer	Santa Cruz Biotechnology	sc-24948	Assay
Trypsin-EDTA (0.05%)	Gibco/ThermoFisher	25300-054	Cell culture