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Working

U Mass - Hepatic gluconeogenesis

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Mouse Metabolic Phenotyping Centers

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ABSTRACT

Summary:

Hepatic gluconeogensis is estimated using pyruvate tolerance test that measures systemic elevation of glucose partly derived from pyruvate and hepatic gluconeogensis following an intraperitoneal bolus injection of pyruvate in awake mice. Hepatic gluconeogenesis is affected by obesity and regulates glucose homeostasis.

EXTERNAL LINK

https://mmpc.org/shared/document.aspx?id=144&docType=Protocol

MATERIALS

NAME	CATALOG #	VENDOR	CAS NUMBER	RRID
Sodium Pyruvate	P5280	Sigma Aldrich		

MATERIALS TEXT

Reagent Preparation:

Reagent 1: 10 % Pyruvate in PBS
Reagents and Materials: Sodium pyruvate, PBS (phosphate buffered saline)
Procedure: Dissolve 1 g of sodium pyruvate in 10 ml PBS

Note:

Sigma-Aldrich, RRID:SCR_008988

1 Mice are fasted overnight (~15 hours) prior to the start of experiment.

2 Collect plasma sample (10 µl) before the start of experiment (basal-0 min) to measure basal glucose levels.

3 Administer intraperitoneal injection of pyruvate (1 g/kg body weight) using an insulin syringe.

4 Collect plasma samples (10 µl) at 10, 20, 30, 45, 60, 90, and 120 min following pyruvate injection to measure circulating glucose concentrations.

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5 For data analysis, plasma glucose levels vs. time after pyruvate injection are plotted, and area-under-curve may be calculated to estimate hepatic gluconeogenesis.

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