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Working

UC Davis - IN-VIVO Glucose-stimulates Insulin Secretion Test

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ABSTRACT

Summary:

An in-vivo glucose-stimulates insulin secretion test is designated to determine alterations in insulin secretion by the pancreas upon a bolus IP Glucose injection.

EXTERNAL LINK

https://mmpc.org/shared/document.aspx?id=86&docType=Protocol

MATERIALS

NAME	CATALOG #	VENDOR	CAS NUMBER	RRID
45% Glucose solution	NC0025179(50-165-7017 replaced)	Fisher Scientific		
Insulin Syringes	14-826-79	Fisher Scientific		
Saline Solution	L97753	Fisher Scientific		
Ultra Sensitive Mouse Insulin ELISA kit	90080	Crystal chem		AB_2783626
Heparin Sodium	401586B	Abraxis		
Easy Check Glucose test strips	00-101(new SKU 88982400)	JRS Medical		
Easy Check Glucose monitor	Y4209 (new SKU 88972401)	JRS Medical		

MATERIALS TEXT

Dilute the glucose stock solution (45%) with saline to 20% by adding 20ml stock to 25ml 0.9% (w/v) sterile saline.

Note:

Fisher Scientific, RRID:SCR_008452
Ultra Sensitive Mouse Insulin ELISA kit, Cite this, (Crystal Chem Cat# 90080, RRID:AB_2783626)

1 Fast mice for 16 hours by taking away food the day before (3:00pm)

2 The following day, Calibrate the glucose meter according to the manufacturer's instructions.

Deprive mice from water then measure blood glucose level using a glucometer and remove immediately approximately 50 µl of blood from

3 the tail via a tail tip cut and transfer directly onto a sterile 0.5ml microcentrifuge tube containing 2ul Heparin.

4 Centrifuge at 8000rpm for 5min then transfer plasma (supernatant) to a new 0.5ml microcentrifuge tube and freeze at -80°C.

5 Give the mouse an intraperitoneal injection of Glucose (2g/kg) with a 27 G needle

6 Continue to take blood samples from the initial tail cut at 2, 5, 15 and 30 min flowing injection and repeat step3 and 4.

7 **NOTE:**

At the end of the experiment, wipe tail with 70% alcohol and allow drying. Ensure that blood loss from the tail stopped before placing the animal back to its cage.