Oct 19, 2019 Version 2

Frequently sampled Insulin glucose tolerance test V.2

DOI
dx.doi.org/10.17504/protocols.io.8e8hthw

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OPEN ACCESS

DOI: https://dx.doi.org/10.17504/protocols.io.8e8hthw

External link: https://www.diacomp.org/shared/document.aspx?id=50&docType=Protocol

Protocol Citation: Timothy Nichols, David Clemmons 2019. Frequently sampled Insulin glucose tolerance test. **protocols.io https://dx.doi.org/10.17504/protocols.io.8e8hthw**

Protocol status: Working
We use this protocol and it's working

Created: October 19, 2019

Last Modified: October 19, 2019

Protocol Integer ID: 28864

Keywords: glucose tolerance, insulin sensitivity, cardiovascular, nephropathy, neuropathy, retinopathy, uropathy, insulin glucose tolerance test summary, sampled insulin glucose tolerance test summary, insulin sensitivity in pig, assessment of insulin sensitivity, diabetic complication, diacomp, assay

Abstract

Summary:

This assay is used by the DiaComp to measure glucose tolerance and insulin sensitivity in pigs.

Diabetic Complications:

Cardiovascular

Nephropathy

Neuropathy

Retinopathy

Uropathy

Reference:

1. Bergman RN, Finegood DT, Ader M: Assessment of insulin sensitivity in vivo. Endocr Rev 1985, 6:45-86.

Materials

MATERIALS

YSI Glucose Analyzer **YSI Life Sciences**

ICN Insulin RIA kit

Reagents Quantity Required

Reagent/Material	Quantity Required
Intravenous catheter	2
ICN Insulin RIA kit	1 kit
YSI Glucose Analyzer	1

Troubleshooting

1 **FSIGT or Bergman analysis**

Pigs are studied after an overnight fast. The food intake of the animals is monitored for 3 days prior to the fast to ensure adequate carbohydrate intake. Two intravenous catheters are placed, one for sampling and one for infusing glucose and insulin. A bolus of glucose (0.3 gm/kg) is administered as a 50% solution over ~5 min. Blood samples are obtained at –15, -10, -5, -1, 0, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, and 19 minutes. At 20 minutes an insulin bolus (0.03U/kg) is injected and frequent blood samples for insulin and glucose measurements are collected up to the 180 minute time point. Insulin is measured by RIA (ICN) and glucose is measured on a YSI instrument (Yellow Springs, Ohio). The data were analyzed by the Bergman method to calculate an insulin sensitivity index (S_I) using MINMOD Millennium version 6.02.[1]