



Insulin tolerance test

Version: 1
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(note that the following list should be linked to the appropriate location.)

- [Summary](#)
- [Reagents and Materials](#)
- [Protocol](#)
- [Reagent Preparation](#)
- [Reagent 1](#)
- [Reagent 2](#)
- [Reagent 3](#)

Summary: *(This area will include a brief description of what the protocol is used for and why someone would need to use it.)*

Insulin tolerance test measures systemic clearance of glucose following an intraperitoneal bolus injection of a physiological dose of insulin. This experiment measures insulin sensitivity in awake mice assuming that there are no alterations in the animal’s counterregulatory response. Insulin sensitivity is altered in obese mice.

Reagents and Materials: *(This should be a comprehensive list of stock solutions and material. The reagent list for the stock solutions is included in the reagent preparation area that is included at the end of this SOP.)*

Reagent/Material	Vendor	Stock Number
Insulin	Novolin	Regular human insulin, U-100

Protocol:

1. Mice are fasted for 5 hours prior to the start of experiment.
2. Collect plasma sample (20 µl) before the start of experiment (basal-0 min) to measure basal insulin and glucose levels.
3. Administer intraperitoneal injection of insulin (0.5 or 0.75 unit/kg body weight) using an insulin syringe.
4. Collect plasma samples (10 µl) at 10, 20, 30, 60, 90 and 120 min for the measurement of glucose concentrations.
5. For data analysis, plasma glucose levels vs. time after insulin injection are plotted, and area-under-curve may be calculated to estimate insulin sensitivity.