



# Insulin clearance

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

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

Insulin clearance test measure systemic clearance of insulin following a bolus injection. Liver accounts for the majority of systemic insulin clearance following secretion from pancreatic  $\beta$ -cells into portal circulation. Hepatic clearance of insulin may be affected by obesity and in other mouse models of altered metabolism. Alterations in insulin clearance may also affect glucose and lipid metabolism.

**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
Insulin Ultrasensitive ELIZA	Alpco	80-INSMSU-E01

## Protocol:

1. Mice are fasted for 5 hours prior to the start of experiment.
2. Collect plasma sample (20  $\mu$ l) 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  $\mu$ l) at 10, 20, 30, 60, 90 and 120 min for the measurement of plasma insulin concentrations.
5. For data analysis, plasma insulin levels vs. time after insulin injection are plotted, and area-under-curve may be calculated to estimate systemic insulin clearance.