A glucose tolerance test is commonly used in estimating the overall insulin sensitivity in vivo in rodent models. The glucose is often given orally (by gavage, OGTT), intraperitoneally (by injection, IPGTT), or intravenously (by IV, IVGTT) after a fast period applied to deprive food in the GI track. Blood samples are taken at intervals to determine how quickly the glucose is cleared from the blood as well as the corresponding changes of insulin in plasma.

There are factors that could influence an overall outcome of the experiment, such as fast duration and dose of glucose. To choose an appropriate testing condition to accommodate your interests, we’d like you to provide us with follow information. This will help ensure that your animals are to be tested in a way you anticipate.

**PI’S NAME:** ________________  **DEPARTMENT:** ________________  **UM ACCOUNT #:** __________

**CONTACT NAME:** ________________  **PHONE/FAX:** ________________  **EMAIL:** __________

**ANIMAL DESCRIPTION:**

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<tr>
<th>Group</th>
<th>Strain</th>
<th>Sex/Age</th>
<th>Diet</th>
<th>BW</th>
<th>Fast/Fed Glucose</th>
<th>Fast/Fed Insulin</th>
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**ANIMAL IDENTIFICATION:**

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<th>Group3:</th>
<th>Group4:</th>
<th>Group5:</th>
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<tbody>
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--Created by Nathan Qi, UM-APC, nathanqi@med.umich.edu, Phone: (734) 764-7043 (lab), (734) 232-8223 (O), Fax: (734) 232-8175
TYPES OF GTT:

1. OGTT  2. IPGTT  3. IVGTT*

* It requires surgical catheterization of jugular vein, with or without catheterization of carotid artery (see our services in surgery procedure).

DIETS: we provide LabDiet 5001 as a regular diet.

Is a different diet required?  YES  NO

If yes, please provide the following information about the diet and ensure that enough diet will be provided, when your animals are transferred.

1) Diet Name: ____________________  2) Color or Shape Identification: _______________________________

3) Storage Requirement:  4 ºC  Room Temperature

4) Special Feeding Instruction (if none, please state NONE): ____________________________________
____________________________________________________________________________________

EXPERIMENTAL SETUP:

1) Glucose Dose:

☐ 1.0 g/kg  ☐ 1.5 g/kg  ☐ 2.0 g/kg

Note: a higher dose is more suitable for a more insulin sensitive model.

2) Fast Duration:

☐ 5hr  ☐ 8~10hr  ☐ 16 hr (overnight)  ☐ Others: ______________________________

Note, 1) 5hr fast is mostly used in mice and young rats with small body mass; 8~16 hr fast is common for adult rats. 2) semi-fast may also be considered in which 1/3 of daily amount of food intake is provided at 5PM, before the test at 9AM next morning.

3) The experiment will be carried out at 8~10 animals per day starting around 1:30pm for mice (after 5 hr fast) and around 9:00am for rats (after overnight fast).

4) Blood sampling for measurement of glucose and insulin will be carried out at time 0, 15, 30, 60, and 120 minutes or at anytime otherwise specified.

ISSUES TO BE AWARE:

1) The room temperature is set at 68~72 °F, with 6:00am to 6:00pm light/dark cycles. Currently we are not able to perform any adjustments on the settings.

--Created by Nathan Qi, UM-APC, nathanqi@med.umich.edu, Phone: (734) 764-7043 (lab), (734) 232-8223 (O), Fax: (734) 232-8175
(2) Are any of your animals genetically modified so that they may experience excessive heat loss when single housed?  
☐ YES  ☐ NO  If yes, please contact us for discussion.

Note: In case mice are group housed, they will be separated and housed individually in our housing unit for at least 7 days prior to the measurement. Separation from group often causes changes in basal metabolism in small animals, which can be stabilized in most cases in 7~14 days.

(3) When choosing fast duration, please note that mice are primarily nocturnal feeders, consuming 75% or more of total daily food intake during the nighttime. An overnight fast often represents a proportionally larger deprivation of calories, resulting in significant decreases in blood glucose and body mass (both lean and fat).

ANIMAL TRASFER AND HOUSING REQUIREMENTS:

(1) Form 8225-C should be completed in advance for all animal transfers between the core and your lab. Please fax the completed form to us at (734) 763-6492.

(2) Upon arrival, all animals should have ear tag identification and be housed in clean cages.

(3) Please place your animals up to 4 mice/cage or 2 rats/cage with the name of the strain and ID# of each animal clearly labeled on the cage card.

(4) Animals without clear identification or being housed with more than one strain in a cage will not be accepted by the core.

PI’S SIGNATURE: ________________________________  DATE: ____________________