Case - Intraperitoneal Glucose Tolerance Test

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ABSTRACT

Summary:

This is the standard protocol for most routine glucose tolerance testing. It is performed on awake mice, fasted for 18 hr (overnight) or 6 hours.

MATERIALS

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D-Glucose stock 25 mg/ml in saline Sigma Aldrich

1cc syringe 26g BD Biosciences

Clotisol Amazon Catalog #T212002

AlphaTrak2 Contributed by users

Glucometer Alphatrak Alphatrak Catalog #cfgs185-m0285

Reagents and Materials:

<table>
<thead>
<tr>
<th>Reagent/Material</th>
<th>Quantity Required</th>
<th>Vendor</th>
<th>Stock Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Glucose stock, 25 mg/ml in saline</td>
<td>2gm/kg body weight</td>
<td>Sigma</td>
<td></td>
</tr>
<tr>
<td>1cc syringe 26g</td>
<td>1/Mouse</td>
<td>BD</td>
<td></td>
</tr>
<tr>
<td>Glucometer Alphatrak</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>AlphaTrak2 Glucose strips</td>
<td>5 per mouse</td>
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<td></td>
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<tr>
<td>Clotisol</td>
<td>100ul</td>
<td>Amazon</td>
<td>T212002</td>
</tr>
</tbody>
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Note:

Sigma-Aldrich, RRID:SCR_008988
BD Biosciences, RRID:SCR_013311
1. Fast mice overnight or for 6 hours. Remove mouse from cage and put into a clean cage with water and no food (5:00PM). Next day begin GTT by 9:00AM.

2. Weigh each mouse and record weight.

3. Insert glucose strip into glucometer and check that the code matches for the strip being used.

4. Take fasting blood glucose by snipping the tail and putting a drop on the glucose strip (already in glucometer). Record fasting glucose as time 0’. Dip tail into clotisol to clot blood.

5. Calculate the amount of glucose needed for a concentration of 2gm glucose/kg body weight. Record the volume for each mouse.

6. Inject each mouse 3’ apart for time 0. Repeat #4 at 15min, 30 min, 60 min and 120 min after IP injection of glucose.

7. Do not take extra blood for insulin measurements. This causes too much stress. Use a separate group of mice for collecting blood after glucose injection for insulin measurements.