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

- 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>
</tr>
<tr>
<td>AlphaTrak2</td>
<td>5 per mouse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucose strips Clotisol</td>
<td>100ul</td>
<td>Amazon</td>
<td>T212002</td>
</tr>
</tbody>
</table>

Note:

Sigma-Aldrich, RRID:SCR_008988
BD Biosciences, RRID:SCR_013311

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