STZ-induced type 1 diabetes model

Summary:

Streptozotocin can selectively destroy the pancreatic β-cells with rapid and irreversible necrosis and can be used to generate a chronic model of hyperglycemia and type 1 diabetes.

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.)

<table>
<thead>
<tr>
<th>Reagent/Material</th>
<th>Vendor</th>
<th>Stock Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptozotocin</td>
<td>Sigma</td>
<td>S0130</td>
</tr>
<tr>
<td>Sodium Citrate</td>
<td>Sigma</td>
<td>71402</td>
</tr>
<tr>
<td>Citric acid</td>
<td>Sigma</td>
<td>C1909</td>
</tr>
</tbody>
</table>

Protocol:

1. Administer an intraperitoneal injection of streptozotocin (50 mg/kg body weight) daily for 5 days.
2. Monitor glucose level for onset of hyperglycemia.

Reagent Preparation:

(This area may have several different preparations with the table of contents below.)

Reagent 1
Reagent 2
Reagent 3

Reagent 1: 0.1 M Na-Citrate
Reagents and Materials: Sodium Citrate, Deionized water
Procedure
1. Dissolve 14.71 g of Na-Citrate in 200 ml water.
Reagent 2: 0.1 M Citric acid
Reagents and Materials: Citric acid, Deionized water
Procedure
1. Dissolve 20.1 g of Citric acid in 200 ml water.

Reagent 3: Streptozotocin in 0.1 M Na-Citrate Buffer
Reagents and Materials: 0.1 M Na-Citrate, 0.1 M Citric acid, Deionized water
Procedure
1. Mix 0.1 M Na-Citrate and 0.1 M Citric acid.
2. Adjust pH to 4.5 with 0.1 M Citric acid.
3. Dissolve streptozotocin in Na-Citrate Buffer.