

May 08, 2019

## U Mass - STZ-induced type 1 diabetes model

DOI

[dx.doi.org/10.17504/protocols.io.xh8fj9w](https://dx.doi.org/10.17504/protocols.io.xh8fj9w)



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External link: <https://mmpc.org/shared/document.aspx?id=152&docType=Protocol>

**Protocol Citation:** Jason Kim 2019. U Mass - STZ-induced type 1 diabetes model. **protocols.io**  
<https://dx.doi.org/10.17504/protocols.io.xh8fj9w>

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**Protocol status:** Working

**We use this protocol and it's working**

**Created:** January 28, 2019

**Last Modified:** May 08, 2019

**Protocol Integer ID:** 19744

**Keywords:** Streptozotocin, pancreatic  $\beta$ -cells, necrosis, type 1 diabetes

## Abstract

### Summary:

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

## Materials

### MATERIALS

 Streptozotocin Merck MilliporeSigma (Sigma-Aldrich) Catalog #S0130

 Sodium Citrate Merck MilliporeSigma (Sigma-Aldrich) Catalog #71402

 Citric acid Merck MilliporeSigma (Sigma-Aldrich) Catalog #C1909

### Reagent Preparation:

#### 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.

### Note:

**Sigma-Aldrich** **RRID:SCR\_008988**



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