

Resource Summary Report

Generated by [dkNET](#) on Sep 16, 2026

Isolation of mouse islet cells, culture with heparan sulfate mimetics and flow cytometry analysis of beta cell viability

DOI:10.17504/protocols.io.bmgjk3un

Type: Protocol

Proper Citation

Sarah Popp, Sarita Dhouchak, Charmaine Simeonovic 2020. Isolation of mouse islet cells, culture with heparan sulfate mimetics and flow cytometry analysis of beta cell viability. protocols.io dx.doi.org/10.17504/protocols.io.bmgjk3un

Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.bmgjk3un>

Authors: Sarah Popp, Sarita Dhouchak, Charmaine Simeonovic

Summary: Isolated mouse islets were dispersed into single cells using Accutase (Millipore; 250 µl/500 islets). 4-8 x 10⁴ islet cells were transferred to individual wells of a 96 well culture plate (CELLSTAR, Greiner Bio-one) for immediate staining for flow cytometry analysis or for culture prior to staining. Isolated mouse islet cells were cultured in the presence or absence of the HS mimetics heparin (a highly sulfated HS analogue from porcine intestinal mucosa) or PI-88 (Progen Pharmaceuticals Limited,) at 50 mg/ml for 2 days in 5% CO₂, 95% air at 37°C. In some studies islet cells were acutely treated with 30% H₂O₂ (Chem-Supply) as a source of reactive oxygen species (ROS) for 5 min on day 0 or after culture for 2 days with/without HS mimetics. Damaged and dying islet cells were assessed using Calcein-AM (Calcein; 0.04 µM; Invitrogen)/Propidium iodide (PI; 2.5 µg/ml; BD Biosciences) or by Sytox green (31.25 nmol/L; Invitrogen, Molecular Probes) uptake. BD LSR Fortessa flow cytometer BD FACS DIVA software (version 8) were used to collect events and Flow Jo software (version 10.0.7, TreeStar Inc.) was used to analyse the intensity of fluorescence staining.

Affiliations: The Australian National University, The Australian National University, The Australian National University

Version: 1

Publication Date: 2020

Proper Citation: Sarah Popp, Sarita Dhouchak, Charmaine Simeonovic 2020. Isolation of mouse islet cells, culture with heparan sulfate mimetics and flow cytometry analysis of beta cell viability. protocols.io dx.doi.org/10.17504/protocols.io.bmgjk3un

Record Creation Time: 20210329T220516+0000

Record Last Update: 20210329T220832+0000

Data and Source Information

Source: