



University Animal Care Committee Standard Operating Procedure		
Document No: 7.19	Subject: Clinical Care of Non-Obese Diabetic (NOD) Mice	
Date Issued: July 26, 2012	Revision: 2	Page No: 1

Location: Queen's University

Responsibility: Principal Investigators (PI), Research Staff, Veterinary Staff

Purpose: The purpose of this Standard Operating Procedure (SOP) is to describe treatment and animal care procedures required for Non-Obese Diabetic (NOD) mice that are in a diabetic state.

1. Introduction and Definitions:

Non-obese diabetic (NOD) mice are considered to be partially immune-compromised and require specific handling and care to maintain a robust health status, thus ensuring accurate experimental results. This includes sterile caging, food, and water, as well as weekly colony weight and blood glucose checks. Specialized care for these animals will be required (once diabetic).

The husbandry techniques specific to the NOD mouse strain, as described below, are to be used in conjunction with the protocol defining Humane Interventions as described in the Queen's University SOP for Humane Interventions in Mice (SOP #7.2).

2. Procedures:

- Housing/Handling:
 - a. Sterile caging including cage base, food/water grate, cage top, and housing igloo.
 - b. Autoclaved, sterile food and water (RO water).
 - c. All NOD mice should be handled using sterile technique.
- Weight/Glucose Checks:
 - a. Body weight and glucose check is to be recorded for all NOD mice once a week at the room level. It is important that both measurements be taken at the same time of day, each day.
 - b. A new sterile 25g or 26g needle is to be used for each mouse for tail-vein pricks (See SOP #7.10 "Blood Collection in Mice").
 - c. Once a mouse has a blood glucose reading of 15mmol/l, daily glucose checks are required. 3 consecutive days with a blood glucose reading of 15 mmol/l or higher is indicative of a diabetic mouse.
 - d. Clinical signs apparent in NOD diabetic mice include:
 - Dehydration – positive skin tent, creamy ocular discharge.
 - Concentrated (dark coloured) urine.
 - Sweet smelling urine.
 - Abnormal posture; hunched, walking on tip toes.
 - Greasy and rough hair coat.



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- e. Once mice are confirmed diabetic and are required to be maintained in a diabetic state as per the approved protocol, the following care must be provided:
- Moist chow is to be given on a daily basis and replaced daily, including weekends.
 - Body weight is to be recorded daily; including weekends.
 - Following SOP #7.9 “Injection Techniques in Mice”, 1mL of sterile 0.9% sodium chloride is to be administered subcutaneously daily (including weekends) to each diabetic mouse. Treatment is to be recorded on their cage card.
 - The mice must be health checked a minimum of twice daily to ensure hydration (i.e. prior to the end of the work day). This includes weekends.