TYPE 1 DIABETES MOUSE REPOSITORY AT THE JACKSON LABORATORY
http://www.jax.org/t1dr/index.html

Description of project

The Type 1 Diabetes Repository (T1DR) at The Jackson Laboratory (TJL) will serve as a central repository and distribution resource for at least 150 mouse strains important to research related to T1D including:

- Non-Obese Diabetic (NOD) mice
- Mice carrying transgenes or targeted mutations
- Strains required for
    - genetic and pathophysiologic analysis of T1D
    - development of new therapies

The major goal is to import model strains into a high health status barrier facility and cryopreserve their embryos. This will ensure that these mouse models continue to be available for future research from a central, stable repository. The T1D repository has also established a mechanism by which investigators can recover mice from cryopreserved embryos of a subset of related strains.

Accomplishments

- The T1DR was funded as a supplement to the NCRR-funded Induced Mutant Resource (IMR) based on a Request for Applications (RFA) entitled 'Competitive Supplements for Type I Diabetes Murine Model Resource' (RR-01-006).
- The T1D Repository is managed as an independent component of the IMR and hence utilizes its existing operational systems. Included in these operational systems is The Total Mouse Database (TTMD) under development that will provide the international scientific community with information on mouse strain characteristics and uses.
- The T1DR web site provides information on the mouse strains available and also includes an on-line form for external investigators to propose strains for inclusion in the T1D Repository (http://www.jax.org/t1dr/index.html).
- TJL has provided the T1DR with 400 breeding pens in a newly renovated high barrier vivarium. This space will be used for quality control of mice recovered from cryopreservation and will serve as the site for distributing live mice.
- Cryopreservation of 52 T1D strains is completed or in progress. These strains are either congenic, transgenic, knockout strains, or combined mutations. Among these in-demand strains are NOD cytokine knockouts, including IL-4, IL-10, IL-4/10, IFNgamma, IFNgamma receptor ß chain gene knockouts, as well as C57BL/6 strains that carry mono- or bi-congenic "*Idd*" chromosomal segments of NOD origin.
- TJL's Cryopreservation Resource can reconstitute cryopreserved strains in the T1DR at any time. Typically 500 embryos are cryopreserved from each strain initially; embryos that have been removed are replaced about every fifth recovery.

Future directions

At least 150 T1D strains will be deposited in the repository.

Materials to be made available to researchers

The deposited T1D strains will be made available to the general scientific community. Please visit http://www.jax.org/t1dr/index.html for more information on ordering mice.

Participants

Sponsors: National Center for Research Resources
National Institute of Diabetes and Digestive and Kidney Diseases

Participating Institution

The Jackson Laboratory, Bar Harbor, ME