Tsp1 -/- Stz Mice, A Model For Diabetes

WARF: P06036US

Inventors: Nader Sheibani-Karkhaneh, Christine Sorenson

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in an improved animal model for the study of diabetic retinopathy.

Overview

Effective and non-destructive treatments are needed for diabetic retinopathy, a major cause of blindness in the United States. Thrombospondin1 (TSP1), a matricellular protein that inhibits angiogenesis *in vivo* and is essential for proper retinal vascular development, is dramatically down-regulated in ocular samples from diabetic rats.

The Invention

Based on this observation, UW-Madison researchers have developed a line of TSP1-negative mice that provides an improved animal model for the study of diabetic retinopathy. They induced diabetes in TSP1-/- mice by injecting them with a single dose of streptozotocin to destroy their pancreatic beta cells. The resulting TSP1 -/- mice develop diabetes-associated early vasculopathies of similar severity to those observed in a previous mouse model developed by the inventors, but after a shorter duration of diabetes.

Applications

- Testing the effects of new compounds for treating diabetic retinopathy

Key Benefits

- Mice rapidly develop vasculopathies associated with diabetes.
- Mice become useful models after three months of diabetes, avoiding issues associated with drug testing in aged mice.
- Mice develop severe non-proliferative retinopathy, which may lead to a proliferative state (the final stage of diabetic retinopathy).

Additional Information

For More Information About the Inventors

- Nader Sheibani-Karkhaneh

Related Technologies

- See WARF reference number P04228US for the inventors' previous Akita/+TSP1-/- mouse.

Tech Fields

- Drug Discovery & Development : Disease models
- Research Tools : Animal & disease models

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854