Resource Summary Report

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Breeding Scheme and Selection of Animals for DiaComp Experiments

DOI:10.17504/protocols.io.8fphtmn
Type: Protocol

Proper Citation

Nobuyo Maeda, Oliver Smithies, Nobuyuki Takahashi 2019. Breeding Scheme and Selection of Animals for DiaComp Experiments. protocols.io dx.doi.org/10.17504/protocols.io.8fphtmn

Protocol Information

URL: https://dx.doi.org/10.17504/protocols.io.8fphtmn

Authors: Nobuyo Maeda, Oliver Smithies, Nobuyuki Takahashi

Group: Diabetic Complications Consortium

Summary: SummaryIt is extremely important to measure quantitative parameters (e.g. plasma glucose, urinary albumin, etc.) in a way that minimizes the effects of any adventitious variables, such as seasonal changes, dietary differences, any differences in the degrees of backcrossing, or unplanned differences in genotypes. This means that, whenever possible, mice of the critical genotypes should be obtained from genotypically identical matings carried out at or close to the same time. Archival data are not appropriate. The breeding scheme to generate the experimental animals can vary in complexity, depending on the fertility of the two genders, whether the Testgene is to be studied in homozygotes or in heterozygotes, and whether the diabetes is induced genetically or by STZ. However, it is important to remember that, when looking for the effects of the Testgene genotype on diabetic complications, the aim is to compare the Testgene mutant/mutant (or Testgene mutant/wt) diabetic animals with their diabetic litter mates that are wildtype at the Testgene locus (Testgene wt/wt). ReferenceWang, C-H, Li, F, Hiller, S, Kim, H-S, Maeda, N, Smithies, O, and Takahashi, N. A modest decrease in endothelial NOS in mice comparable to that associated with human NOS3 variants exacerbates diabetic nephropathy. Proc. Natl. Acad. Sci. USA 108(5): 2070-2075 (2011) PMID: 21245338 PMCID: PMC3033253.Diabetic Complications:

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