Model Name
Obesity, Diet-Induced, Mouse

Item Number
518510

Introduction
This is a diet-induced obesity (DIO) mouse model. Male C57BL/6 mice are fed a high fat diet for 8 to 12 weeks to induce obesity. Animals become obese, mildly to moderately hyperglycemic, and develop impaired glucose tolerance. This model is applied to evaluate the efficacy of test article and mechanism of obesity in mice.

Procedure Summary
Groups of 10 male C57BL/6 mice at 4~6 weeks of age. Mice are fed high-fat diet (Research Diets D12492 (20% protein, 60% fat and 20% carbohydrate)) or control diet for 4 weeks. And then, vehicle, test articles, and positive control, orlistat at 100 mg/kg are administered by oral gavage (PO) once daily for 4 or 8 weeks during the diet feeding. Body weight is record twice weekly.

After mice are administered for 4 or 8 weeks, animals are fasted overnight and serum total cholesterol (TC), low density lipoprotein (LDL), triglyceride (TG) and glucose (GLU) levels are measured by optimized UV method with an automatic analyzer (TBA-120 FR, Toshiba, Japan) on Weeks 8 and/or 12. The animals are sacrificed 24 hours after the final treatment, and epididymal fat pad, inguinal fat pad and liver for each animal are harvested and weighed.

Tissue-to-body weight ratio is calculated for each animal according to the formula: tissue (g)/BW x 100. Half of tissue is snapped frozen in liquid N2 for further study (optional), and the remaining 1/2 portion is formalin-fixed for histology (optional). One-way ANOVA and Dunnett's test is applied for comparison between vehicle control and treated groups. p<0.05 is considered significant.

Suggested Testing
• n=10/group (study design dependent)
• Doses may be administered PO, IV, IP and SC
• Assessments available: Biomarkers and histology services may be performed upon request

Turnaround Time(s)
• For Acute Assays: 4 weeks from sample receipt
• For Subacute Assays: 6 weeks to 3 months

Literature

Related Assay(s) (Item # - Assay Name - Species)
518000 - Cholesterol, Normal Serum (Total, HDL, LDL, TG) – Mouse
518050 - Cholesterol, Serum (Total, HDL, LDL, TG) Diet-Induced – Hamster
518530 - Cholesterol, Serum (Total, HDL, LDL, TG) Diet-Induced – Guinea Pig

Modified Protocols
We will readily accommodate client-specified alterations.

Laboratory
These assays are performed at our AAALAC accredited laboratory in Taipei.

For current details about our Company address and contact information, please reference our website http://www.pharmacologydiscoveryservices.com/company-info/
Animal Welfare
All aspects of this work are performed in general accordance with the Guide for the Care and Use of laboratory animals (National Academy Press, Washington, DC, 2011). The study protocol was approved by the Pharmacology Discovery Services IACUC and is performed with the oversight of veterinarians to assure the humane treatment of laboratory animals.

Reference Compound
Orlistat

Last modified December 23, 2019