**Model Name**  
Diabetes, Type II, Obese Zucker Diabetic Fatty (ZDF) Rats

**Item Number**  
541700

**Introduction**  
Type 2 diabetes (T2D) is a metabolic disorder characterized by high blood glucose due to insulin resistance and insulin deficiency. The Zucker fatty (ZDF) rat is most widely used for study of T2D associated with obesity.

**Procedure Summary**  
Groups of 6 obese Zucker diabetic fatty rats (ZDF/Gmi, fa/fa) 16 ± 1 weeks of age are used. Test animals receive treatment of vehicle and/or test compounds by oral (PO) administration after pre-treated blood collection once daily for a total of 7 consecutive days. All animals are allowed free access to normal laboratory chow and water. Blood samples are collected again from the retro-orbital sinus 90 minutes after the last dosing for serum glucose and insulin determination. Serum glucose and insulin levels are measured by enzymatic method (Mutaratase-GOD) and ELISA (rat insulin assay kit) percent change is determined. Serum glucose and insulin percentage of post-treatment relative to pre-treatment group values obtained on the seventh day are calculated and one way ANOVA followed by Dunnett's test is then applied for comparison between treated and vehicle groups. Differences is considered significant at * P<0.05.

**Suggested Testing**  
- n=6/group (study design dependent)  
- Doses may be administered PO, IV, IP and SC

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

**Literature**  

**Modified Protocols**  
We will readily accommodate client-specified alterations.

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

**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 Compounds**  
Metformin

Last modified October 1, 2018