

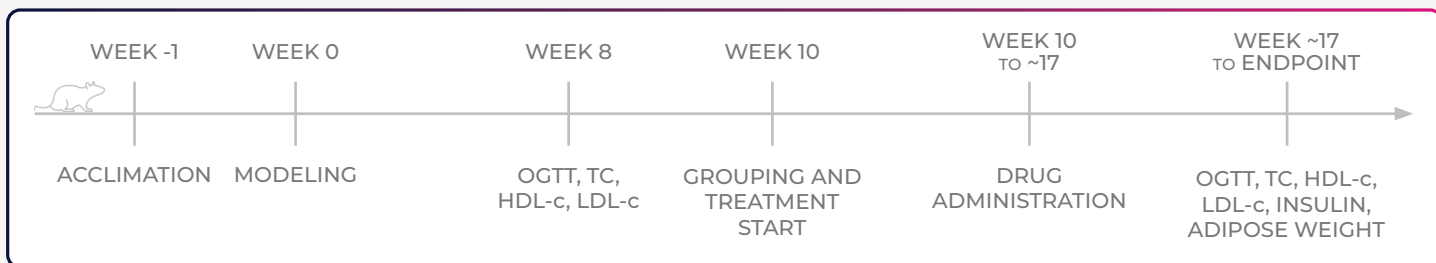
# DIET-INDUCED OBESITY (DIO) MOUSE MODEL

Obesity is a chronic, complex disease characterized by excessive fat deposits. In most countries, obesity is a major public health issue with global costs of obesity predicted to reach US\$3 trillion per year if no intervention.

- Obesity is a result of an imbalance between energy intake (diet) and energy expenditure (physical activity).
- Can lead to several comorbidities and health issues, including:
  - Heart disease
  - Type 2 diabetes
  - Metabolic syndrome
  - Bone health
  - Reproduction
  - Predisposition to the development of various cancers
- Treatment should initially focus on dietary and lifestyle changes. If these fail, then the following options can be considered:
  - Weight-loss medications
  - Surgery

ChemPartner offers a validated DIO mouse model for your metabolic research, providing a robust platform for assessment of therapies targeting obesity.

## DIET-INDUCED OBESITY PRECLINICAL *IN VIVO* MOUSE MODEL



### MICE

- Male C57BL/6N aged 7 weeks on arrival

### MODEL

- Obesity-induced via feeding in weeks 0-17 with a high fat diet

### SoC VALIDATION

### MAJOR READOUTS

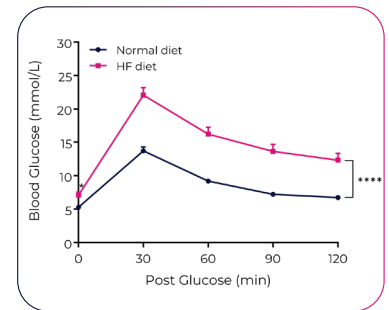
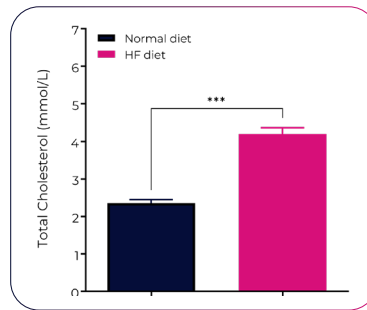
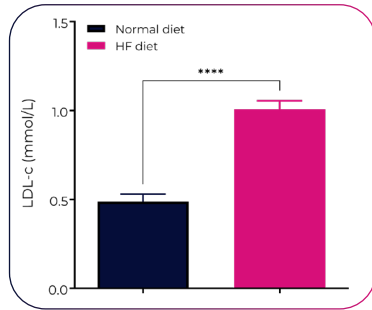
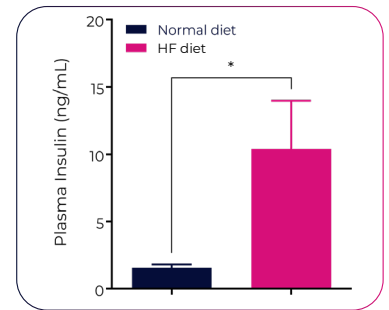
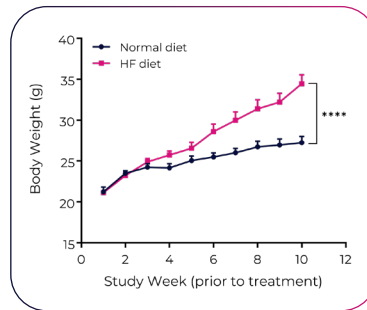
- Body weight
- Food intake
- Oral glucose tolerance test (OGTT)
- Total cholesterol (TC), HDL-c, and LDL-c
- Plasma insulin
- Adipose weight

## DIET-INDUCED OBESITY MOUSE MODEL

### CLINICALLY RELEVANT

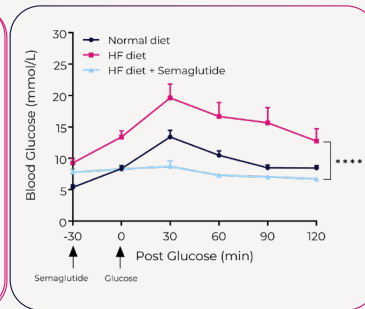
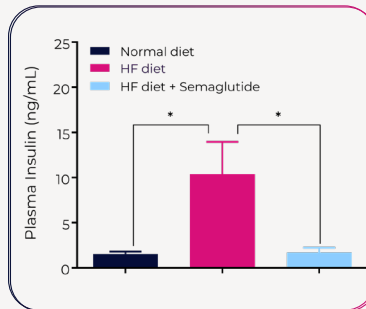
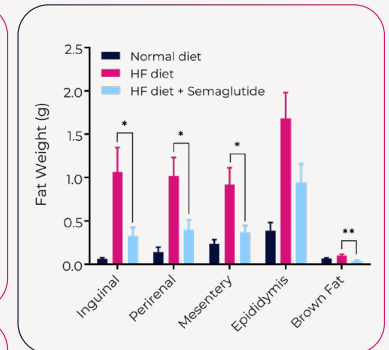
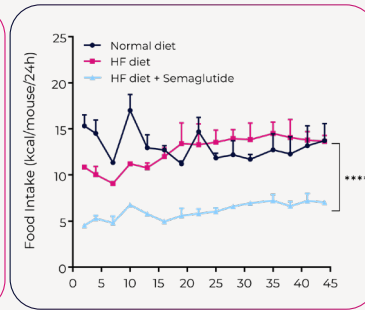
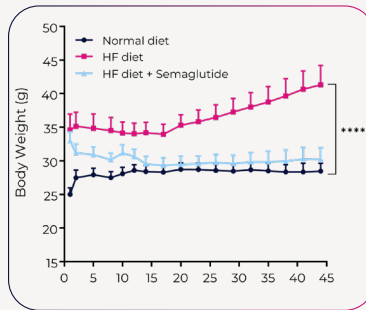
Animals are:

- ✓ Hyperinsulinemic
- ✓ Hyperlipidemic
- ✓ Hypercholesterolemic
- ✓ Glucose intolerant



## SEMAGLUTIDE VALIDATION IN DIO MICE

- Statistically significant reduction in body weight ( $p < 0.0001$ ) and food intake ( $p < 0.0001$ ) following Semaglutide administration
- Statistically significant decrease following Semaglutide administration in:
  - Inguinal fat ( $p = 0.0177$ )
  - Perirenal fat ( $p = 0.0205$ )
  - Mesentery fat ( $p = 0.0160$ )
  - Brown fat ( $p = 0.0047$ )
- Mice treated with Semaglutide had improved glucose tolerance ( $p < 0.0001$ ) and decreased plasma insulin levels ( $p = 0.0175$ )



## SUMMARY

The utilization of cost-effective, clinically relevant *in vivo* models for studying metabolic disease is often a pre-requisite prior to new drugs entering human clinical trials. The DIO mouse model is a useful pre-clinical *in vivo* tool for evaluating anti-obesity therapies; mimicking many of the comorbidities and complications of obesity.

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