**Diet Induced Obesity rat model**

**Key benefits**
- To mimic gradual body weight gain, and especially visceral fat hypertrophy, as observed in western populations
- To select the best drug candidate in a reproducible model, suitable for screening
- To test the efficacy of compounds in a model with sensitivity to all reference compounds tested close to clinical setting

**Animal Model**
- Background Strain: Sprague Dawley (SD) rat
- Gender/Weight: male 250/300g
- Diet: High fat - high carbohydrate
- Time on diet: ~8 weeks (depending on required severity)
- Positive reference compounds: sibutramine, pioglitazone, metformin

**Pathophysiological Features**
- Obesity (visceral and subcutaneous fat hypertrophy)
- Glucose intolerance
- Hyperinsulinemia
- Insulin resistance
- Hyperleptinemia
- Liver steatosis

**Pharmacological Relevance**
- Reference compounds: sibutramine 7.5mg/kg, pioglitazone 10mg/kg, metformin 300mg/kg
- Treatments: chronic for 3 weeks.
- Sibutramin is the most efficient and improves the whole phenotype mainly via its satiating effect.
- Pioglitazone improves insulin resistance but enhances body weight, as expected with a PPARγ agonist.
- Metformin mildly improves all parameters, as expected in a non hyperglycemic but insulin resistant model.