A Comparison of Diet-Induced Obese Mice From Taconic and the Jackson Laboratory
## Workflow for B6DIO Study

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Conditioning</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taconic</td>
<td>OTS-DIO</td>
<td>TAC DIO</td>
</tr>
<tr>
<td>Jax</td>
<td>OTS-DIO</td>
<td>JAX DIO</td>
</tr>
<tr>
<td>Taconic</td>
<td>OTS Regular Diet</td>
<td>Tac Reg Diet</td>
</tr>
<tr>
<td>Jax</td>
<td>OTS Regular Diet</td>
<td>Jax Reg Diet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time on Diet</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Week</td>
<td>-2</td>
<td>-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
<td>T.Col &amp; lipoprint</td>
<td>Adiponectin</td>
<td>FFA</td>
<td>Triglycerides</td>
<td>Leptin</td>
<td>Corticosterone</td>
<td>PIC</td>
<td>ACE</td>
</tr>
<tr>
<td>1</td>
<td>acclimation</td>
<td>acclimation</td>
<td>fasted bleed</td>
<td>Food Intake</td>
<td>OGTT + insulin</td>
<td>DEXA</td>
<td>ITT</td>
<td>Fed Bleed</td>
</tr>
</tbody>
</table>

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• Tac C57BL/6 mice are heavier than Jax on the HFD
• By ANOVA, Group, time and interaction were all highly significant (P<0.0001). Bonferroni corrected post hoc pairwise comparisons also find that the two DIO treated strains were significantly different (P<0.0001) but the regular diet strains did not differ from each other
• Food intake did not differ between any of the groups as the absolute amount eaten
• When normalized to body weight, the food intake differed between the two diets but not between the two sub-strains on each respective diet
Tac DIO mice have higher adiposity than Jax DIO mice when OTS
***P<0.001 compared between two strains, Bonferroni post hoc
Adipose Depot Weights

***P<0.001, **P<0.01 compared between two strains, Bonferroni post hoc
Adipose Weights Normalized to Body Weight

***P<0.001, compared between two strains, Bonferroni post hoc
Fasted Chemistries

**Triglycerides**
- TAC DIO
- JAX DIO
- Tac Reg Diet
- JAX Reg Diet

**Adiponectin**
- TAC DIO
- JAX DIO
- Tac Reg Diet
- JAX Reg Diet

**Cholesterol**
- Tac DIO
- Jax DIO
- Tac Reg Diet
- JAX Reg Diet

**Free Fatty Acids**
- Tac DIO
- Jax DIO
- Tac Reg Diet
- JAX Reg Diet

**P<0.01 compared between two strains, Bonferroni post hoc**
Oral Glucose Tolerance Test - Glucose

OGTT-Glucose

- Tac DIO
- JAX DIO
- Tac Reg Diet
- JAX Reg Diet

Glucose (mg/dL) vs Time (min)

Area Under the Curve (Glucose)

- TAC DIO
- Jax DIO
- Tac Reg Diet
- JAX Reg Diet

Baseline Glucose

Glucose (mg/dL)
• Tac DIO mice were more hyperinsulinemic than Jax DIO mice
Pancreatic insulin content:

- TAC DIO: 7.5 μg insulin/mg protein
- JAX DIO: 2.5 μg insulin/mg protein
- TAC Reg Diet: 0.0 μg insulin/mg protein
- JAX Reg Diet: 0.0 μg insulin/mg protein

ANOVA $P<0.0001$, $***P<0.001$

Bonferroni post-hoc compared to other groups
Tac DIOs show more insulin resistance than Jax DIO
Leptin and Corticosterone

**Serum Leptin**
- TAC DIO
- JAX DIO
- TAC Reg Diet
- JAX Reg Diet

ANOVA $P<0.001$

Only differences in post hoc (Bonferroni) are between different diets

**Serum Corticosterone**

ANOVA $P=0.011$

*P<0.05, Bonferroni corrected post hoc
Summary of Differences Between Tac and Jax DIO Mice

- Tac DIO mice are heavier than Jax DIO mice at the corresponding age (from 15 to 22 weeks of age).
  - Corresponds with higher fat mass by DEXA body composition measurements
  - Corresponds with heavier dissected adipose depots and total adipose
- Tac have higher cholesterol than age-matched Jax when DIO
- No difference in glucose tolerance between the two strains when age-matched
- Tac have higher plasma insulin levels than age-matched Jax when DIO (pancreatic insulin content corresponds with this)
- Tac are more insulin resistant than age-matched Jax when DIO