TD.88137 Adjusted calories diet (42% from fat)

A staple of atherosclerosis research

More than 25 years ago, our nutritionists collaborated with researchers at Rockefeller University to develop a diet with features of a ‘Western Diet’ to characterize and enhance atherosclerosis development in their newly generated Apoe deficient mouse model. With over 200 unique users worldwide, TD.88137 continues to be fed to genetically modified cardiovascular models to accelerate and enhance hypercholesterolemia and plaque formation.

Critical dietary features of TD.88137 related to atherosclerosis development include:

+ Cholesterol (0.2% total cholesterol)
+ Total fat (21% by weight; 42% kcal from fat)
+ High in saturated fatty acids (>60% of total fatty acids)
+ High sucrose (34% by weight)

Typical fatty acid profile of TD.88137

<table>
<thead>
<tr>
<th>Typical fatty acid analysis, % of diet</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>20.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Saturated fat</td>
<td>12.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Monounsaturated fat</td>
<td>5.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Polyunsaturated fat</td>
<td>1.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Unknown?</td>
<td>1.3</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Selected nutrient information

<table>
<thead>
<tr>
<th>% By weight</th>
<th>% kcal from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>17.3</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>48.5</td>
</tr>
<tr>
<td>Fat</td>
<td>21.2</td>
</tr>
<tr>
<td>kcal/g</td>
<td>4.5</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

1 Values are calculated from ingredient analysis or manufacturer data.
2 0.15% added, 0.05% from fat source.

Teklad diets are designed and manufactured for research purposes only.
Key points from the literature

TD.88137 has been used to accelerate atherosclerosis development in Apoe and Ldlr deficient models:

+ In Apoe deficient mice, plasma cholesterol triples to >1500 mg/dL within three weeks (1, 2). Foam cell and lesion development occurs within 6-10 weeks (2-4). Fibrous plaque formation is observed at 15 weeks with the development of fibrous caps after 20 weeks (2).
+ Ldlr deficient mice fed for two weeks increase plasma cholesterol to >800 mg/dL and triglyceride to >300 mg/dL (5). After six weeks of feeding, hyperglycemia, hyperinsulinemia and dyslipidemia develop with small foam cell lesions in the aortic arch (6, 7).

For further information about TD.88137, or if you are interested in learning more about other atherogenic or high fat diets contact us at askanutritionist@envigo.com

With over 420 citations, uses of TD.88137 continue to evolve and include atherosclerosis, obesity, non-alcoholic steatohepatitis (NASH), osteoporosis, hypertension and metabolic syndrome. Contact us for a more extensive reference list.

References


Control diet options for TD.88137

Natural ingredient diets

+ Also referred to as standard diets or chow
+ Diets differ in the source and level of nutrients as well as the presence of non-nutritive factors (such as phytates or phytoestrogens) compared to TD.88137
+ Limits inferences to differences in dietary pattern versus a specific dietary component

Ingredient matched, low fat diets

+ Controls for the type of ingredients, non-nutritive components and the source and level of specific nutrients
+ Suggested ingredient matched, low fat dietary controls for TD.88137 listed below; data sheets can be found on our website at envigo.com

<table>
<thead>
<tr>
<th>Diet</th>
<th>kcal/g</th>
<th>% kcal from fat</th>
<th>kcal % by weight</th>
<th>Fat, % by weight</th>
<th>Fat sources, % by weight</th>
<th>Sucrose, % by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD.05230</td>
<td>3.7</td>
<td>12.6</td>
<td>1.3</td>
<td>5.2</td>
<td>3.7% milk fat, 1.3% soybean oil</td>
<td>34.1</td>
</tr>
<tr>
<td>TD.08485</td>
<td>3.6</td>
<td>13.0</td>
<td>1.3</td>
<td>5.2</td>
<td>3.7% milk fat, 1.3% soybean oil</td>
<td>12.0</td>
</tr>
</tbody>
</table>

Additional controls are available. Contact a nutritionist at askanutritionist@envigo.com.

Key planning information:

• Store diet refrigerated and plan to use within six months. Diet should be replaced at minimum once per week when fed on cage tops.
• Diets available as a soft ½” pellet or as a crumbly powder.
• Three kg minimum order quantity. For planning purposes, estimates for diet uses (including feed intake and diet waste) are 5 g of diet per mouse and 30 g of diet per rat per day.
• Two-day lead time for orders less than 10 kg.
• Two-week lead time for larger quantity orders.
• Lead time for irradiation adds two weeks for any quantity of diet and must be requested at the time you place your order. Changes in texture and browning may occur with irradiation.
• Shipping can affect pellet quality. Vacuum packaging can offer protection of the pellets during shipping. Two-day shipping is recommended during warmer months.
• Contact us to place an order, obtain pricing or check your order status.