Diagnostic Exercise
From The Davis-Thompson Foundation*

Case #: 77 Month: February Year: 2017

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Clinical History: This male Sprague Dawley Rat (Cr1:CD(SD)) was 17 weeks old at the end of 14 day recovery from a routine 28-day study. This particular rat was from the adjuvant-control group and did not receive the test article. There were no clinical signs and the animal survived until scheduled sacrifice.

Laboratory Findings:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Individual Value</th>
<th>Laboratory Historical Control for 16-18 week old male Cr1:CD(SD) rats</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUN</td>
<td>*22.7 mg/dL</td>
<td>11.2 – 19.3 mg/dL reference range</td>
</tr>
<tr>
<td>Creatinine</td>
<td>0.41 mg/dL</td>
<td>0.3 – 0.5 mg/dL reference range</td>
</tr>
<tr>
<td>ALP</td>
<td>135 U/L</td>
<td>80-178 U/L reference range</td>
</tr>
<tr>
<td>ALT</td>
<td>30 U/L</td>
<td>28-65 U/L reference range</td>
</tr>
<tr>
<td>AST</td>
<td>107 U/L</td>
<td>66-157 U/L reference range</td>
</tr>
<tr>
<td>Total bilirubin</td>
<td>0.0 mg/dL</td>
<td>0.00 – 0.10 mg/dL reference range</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>71 mg/dL</td>
<td>36-93 mg/dL reference range</td>
</tr>
<tr>
<td>Albumin</td>
<td>3.5 mg/dL</td>
<td>3.7 – 4.3 mg/dL reference range</td>
</tr>
<tr>
<td>Total Protein</td>
<td>6.1 mg/dL</td>
<td>6.0 – 7.0 mg/dL reference range</td>
</tr>
<tr>
<td>Globulin</td>
<td>2.6 mg/dL</td>
<td>2.1 – 3.0 mg/dL reference range</td>
</tr>
<tr>
<td>Liver Weight</td>
<td>16.68 g</td>
<td>9.9 – 17.7 g (mean +/- 2 SD)</td>
</tr>
<tr>
<td>Kidney Weight</td>
<td>*8.78 g</td>
<td>2.77 – 4.38 g (mean +/- 2 SD)</td>
</tr>
</tbody>
</table>

* - exceeded laboratory historical control reference range

Necropsy Findings: Multiple pinpoint (2 mm) cysts were present in the renal cortex and medulla.
Microscopic images:

**Figure 1.** Kidney; H&E, 0.75x objective magnification.

**Figure 2.** Kidney, H&E. 20x objective magnification (at cortico-medullary junction).
Follow-up questions: Morphologic diagnosis, what other organ would likely be affected, cause, etiologic diagnosis, name of this condition.

*The Diagnostic Exercises are an initiative of the Latin Comparative Pathology Group (LCPG), the Latin American subdivision of The Davis-Thompson Foundation. These exercises are contributed by members and non-members from any country of residence. Consider submitting
an exercise! A final document containing this material with answers and a brief discussion will be posted on the CL Davis website (http://www.cldavis.org/diagnostic_exercises.html).

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