**Abstract**

The dosages levels of 2.5, 15, and 100 mg/kg/day (MTD) of PFHxA (males) and 5, 30, and 200 mg/kg/day of PFHxA (females) were selected for the 2-year bioassay based on a previous 13-week study (Kirkpatrick, 2006, WIL-534001). The results of this 13-week study determined that the maximum tolerated dose (MTD) for PFHxA was 100 mg/kg/day of PFHxA for males and 200 mg/kg/day of PFHxA for female rats. In the present 2-year bioassay, some systemic toxicity was evidenced at the highest dose level in both males and females based on survival and renal effects (urinalysis parameter changes in males and papillary necrosis and/or tubular degeneration in females). The no-observed-effect level (NOEL) in the two year chronically administered bioassay for non-neoplastic, systemic toxicity of PFHxA was observed to be 15 mg/kg/day for males and 30 mg/kg/day for females. As there was no evidence of carcinogenicity in either male or female rats, the NOEL for neoplastic findings of PFHxA was 100 mg/kg-day for males and 200 mg/kg/day for females, for the highest doses examined.

**Methods**

**Chemical**: Perfluorooctanoic acid (PFHxA)

**CAS no.**: 307-24-4

**Animals**: CD(CD) male and female rats

**Dosages**

<table>
<thead>
<tr>
<th>Dosage Level (mg/kg/day)</th>
<th>Number of Animals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
</tr>
<tr>
<td>VEH/NCX</td>
<td>60</td>
</tr>
<tr>
<td>PFHxA</td>
<td>60</td>
</tr>
<tr>
<td>High</td>
<td>70</td>
</tr>
</tbody>
</table>

**Main Study Animals**

- Assignment of animals to study groups
- Clinical observations recorded daily (weight, food consumption, and death); weekly (general behavior, clinical chemistry, motor activity, fecal and urine production)
- Serum analyses performed at 2 weeks, 13 weeks, and 51 weeks
- Histopathological examinations of all organs
- Blood samples collected for hematology and serum chemistry analyses: 2 weeks, 13 weeks, and 51 weeks

**Summary of body weights**

**SUMMARY OF TOTAL MOTOR ACTIVITY COUNTS**

Tumor Incidence

**Male**

- **Gastrointestinal Tract**
  - Adenoma: 4, 4, 3
  - Carcinoma: 0, 0, 2
  - Malignant: 1, 1, 1

- **Bone**
  - Adenoma: 10, 5, 4
  - Carcinoma: 3, 5, 2

- **Adrenal Medulla**
  - Adenoma: 1, 0, 0
  - Carcinoma: 3, 5, 2

- **Liver**
  - Adenoma: 2, 2, 3
  - Carcinoma: 2, 2, 3

- **Spleen**
  - Adenoma: 1, 1, 1
  - Carcinoma: 1, 1, 1

- **Brain**
  - Adenoma: 3, 2, 2
  - Carcinoma: 2, 2, 2

- **Kidney**
  - Adenoma: 3, 3, 3
  - Carcinoma: 3, 3, 3

**Female**

- **Gastrointestinal Tract**
  - Adenoma: 2, 2, 2
  - Carcinoma: 2, 2, 2

- **Bone**
  - Adenoma: 10, 5, 4
  - Carcinoma: 3, 5, 2

- **Adrenal Medulla**
  - Adenoma: 1, 0, 0
  - Carcinoma: 3, 5, 2

- **Liver**
  - Adenoma: 2, 2, 3
  - Carcinoma: 2, 2, 3

- **Spleen**
  - Adenoma: 1, 1, 1
  - Carcinoma: 1, 1, 1

- **Brain**
  - Adenoma: 3, 2, 2
  - Carcinoma: 2, 2, 2

- **Kidney**
  - Adenoma: 3, 3, 3
  - Carcinoma: 3, 3, 3

**Conclusions**

1. The NOEL for neoplastic findings was determined to be 100 mg/kg/day (males), 200 mg/kg/day (females) (the highest doses examined and the previously determined MTD).
2. The NOEL for non-neoplastic systemic toxicity (based on some survival and renal effects (urinalysis parameter changes in males and papillary necrosis and/or tubular degeneration in females) was observed to be 15 mg/kg/day for male rats and 30 mg/kg/day for female rats.
3. Under the conditions of this study Perfluorooctanoic Acid is not carcinogenic in rats and its chronic toxicity was low.