**CRO services for Acute Liver Failure**

**Acute liver failure (ALF)** carries a high mortality of approximately 40%, which is caused by viral infections (hepatitis A, B and E), drug allergy or autoimmune hepatitis. ALF exhibits symptoms of severe injury such as destruction of hepatocytes or decrease in liver function due to massive necrosis and inflammation.

**Concanavalin A (ConA)-induced acute liver failure model** is widely used for acute immune-mediated hepatitis in contrast to several other models, which is primarily driven by the activation and recruitment of T cells to the liver. The outcome of ALF by ConA is leading to severe liver inflammation, tissue necrosis and terminal organ failure.

**SMC**, a Tokyo-based biotech company known as the leading nonclinical CRO for nonalcoholic steatohepatitis (NASH), also provides pharmacology study service of acute ConA model in mice. Our expertise in inflammation/fibrosis is now experienced in liver failure R&D.

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**ConA-induced acute liver failure model**

**Animal:**
- Male C57BL/6J (6 week-old)

**Induction of ALF:**
- Injection of Concanavalin A

**Major endpoint:**
- Histology on liver tissue (HE staining)

**Additional endpoints:**
- Mortality rate
- Blood biochemistry (ALT, AST,...)
- Semi-quantitative RT-PCR (IL-6, TNF-α, ...)
- Immunohistochemical analyses for molecular markers
- Cytokines and chemokines in blood and livers by ELISA

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**Evaluation of liver injury**

**Serum ALT**

**Serum AST**

**HE-stained liver sections**

**Table. Survival rate**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>No. of survivors/total no. of mice used</th>
<th>Survival rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>10/10</td>
<td>100%</td>
</tr>
<tr>
<td>Concanavalin A -6h</td>
<td>10/10</td>
<td>100%</td>
</tr>
<tr>
<td>Concanavalin A -24h</td>
<td>5/10</td>
<td>50%</td>
</tr>
<tr>
<td>Concanavalin A -48h</td>
<td>5/10</td>
<td>50%</td>
</tr>
</tbody>
</table>

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