



APAP

Acetaminophen-Induced Acute Liver Injury

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COMPARATIVE BIOSCIENCES, INC.
A TRANSLATIONAL APPROACH TO PRECLINICAL RESEARCH

COMPARATIVE BIOSCIENCES, INC.

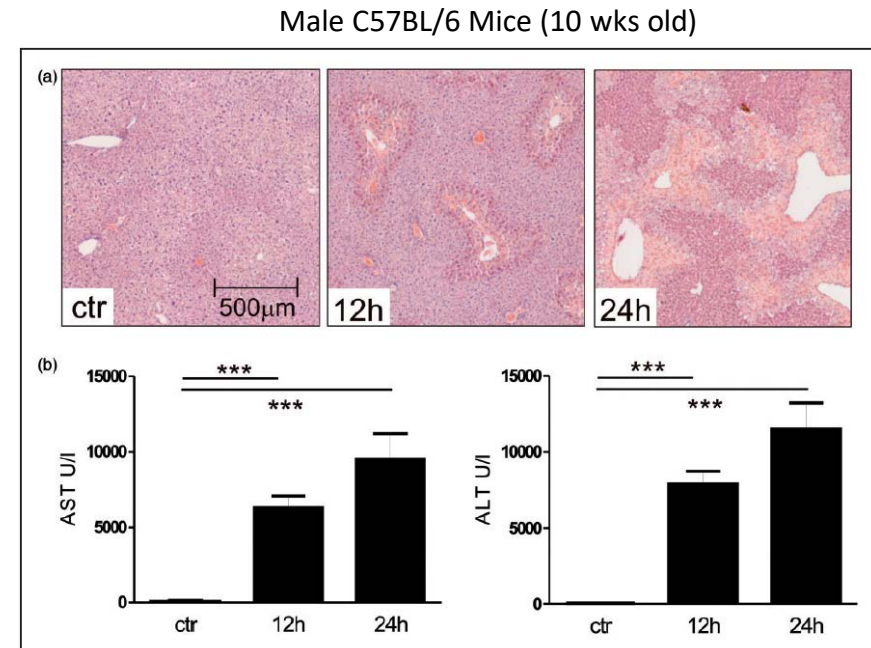
Premier Preclinical Contract Research Organization

- **Over 20 years** of experience
- Conveniently **located in the heart of Silicon Valley**, amidst many biotech companies
- **State of the art, purpose-built facility**
- Approximately **30 employees**
- **Highly experienced staff**
- **GLP, OECD, FDA, USDA, OLAW**
- **AAALAC Accreditation**



APAP Model at CBI

- **Number of Species have been studied**
 - Hampter
 - Mouse
 - Rat
- **Mouse is superior model due to similar hepatic liver metabolism**
- **Single IP induction injection of APAP after fasting at 300mg/kg**
- **At 24 hrs, terminal blood collection for comprehensive liver function panel including AST & ALT**
- **Optional histology and additional biomarker analysis based upon intervention MOA**



APAP Model at CBI

- **Additional Endpoint for this model:**
 - Necropsy for liver tissue collection
 - IHC
 - Western Blot assay of protein quantification
 - Multiplex assay for Cytokine Activity & other markers
- **Option to utilize humanized hepatocyte murine model**
 - Novel literature based model
 - CBI could develop at cost to Edison and then provide credit for subsequent model use



CBI's Advantage to Edison

- **Proximity** – less than 10 mins away from Edison, we can receive test articles, send over samples, or have scientists participate with our team
- **Rapid initiation** – with our own internal IACUC committee, most study protocols can be approved within 3 days.
 - With this study design, from execution to delivery of clin path data could be as little as 10 business days.
- **In house Histopathology** – with board certified pathologist on site, we can rapidly analyze samples (H&E, IHC, and other special stains)
- Should additional studies be requested from Edison on a reoccurring basis, we are will to extend more prefer pricing and schedule



Service and Quality

- **The people at CBI**—from the executive team to the study directors to the research associates expect to have to earn your trust and business.
- **Our ratio of scientists to non-scientists** is one of the highest in the industry. We believe in sound science and every study director is a PhD-level scientist
- **Thoroughness in planning and execution** is key to a successful study. All protocols are vetted and approved by multiple personnel. Our QAU has a rigorous training program. All non-GLP studies are conducted in the spirit of GLP with the same SOPs.
- **We believe in communication:** timely responses to your inquiries and frequent updates on your study are mandatory.
- **Rapid initiation and adjustments;** with the collective expertise of must larger organizations but the flexibility of a smaller more nimble group.
- **You are always welcome** at CBI to meet the staff, tour the laboratory and discuss the progress and results of your study.



Our Staff

- **Study Directors**

- PhD level scientists
- Appointed by management for each job
- Serves as single point of control and is responsible and accountable for study conduct and scientific interpretation
- Experienced attentive and communicative
- Rapid study initiation and report preparation

- **Research Associates**

- Bachelor Level Scientists
- Extensive technical training

- **Quality Assurance**

- Full time, dedicated
- Rigorous training program

- **CBI Management**

- Experienced senior scientific management-with large and small pharma experience



Summary

- **With a focus on quality, CBI provides state of the art:**
 - Toxicology
 - Pharmacokinetics
 - Efficacy
 - Pharmacology
 - In house histopathology
- **Experienced attentive and communicative study directors**
- **Rapid study initiation and report preparation**
- **Established, stable business**
- **Regulatory compliance**
- **Favorable pricing structure**

