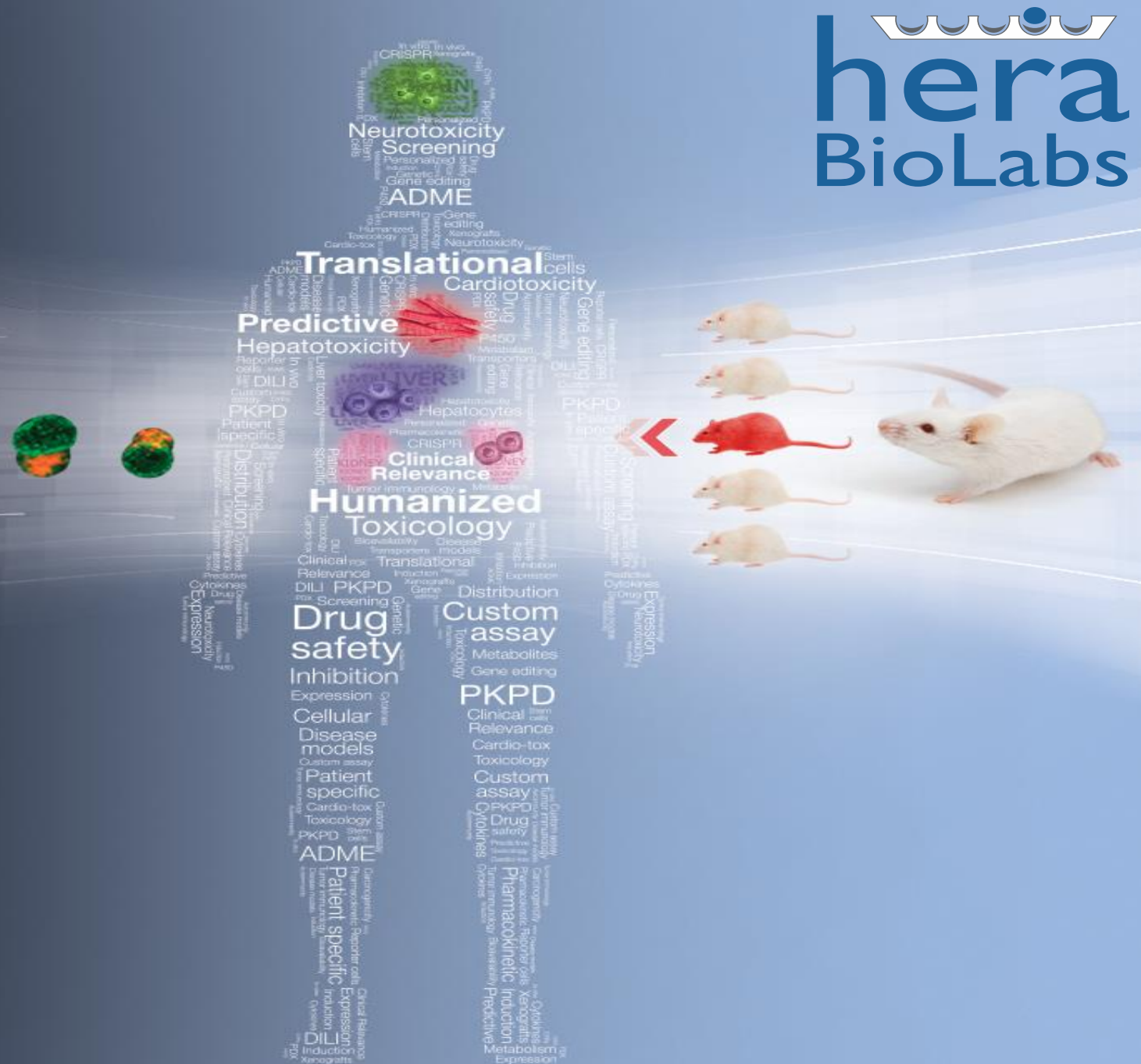


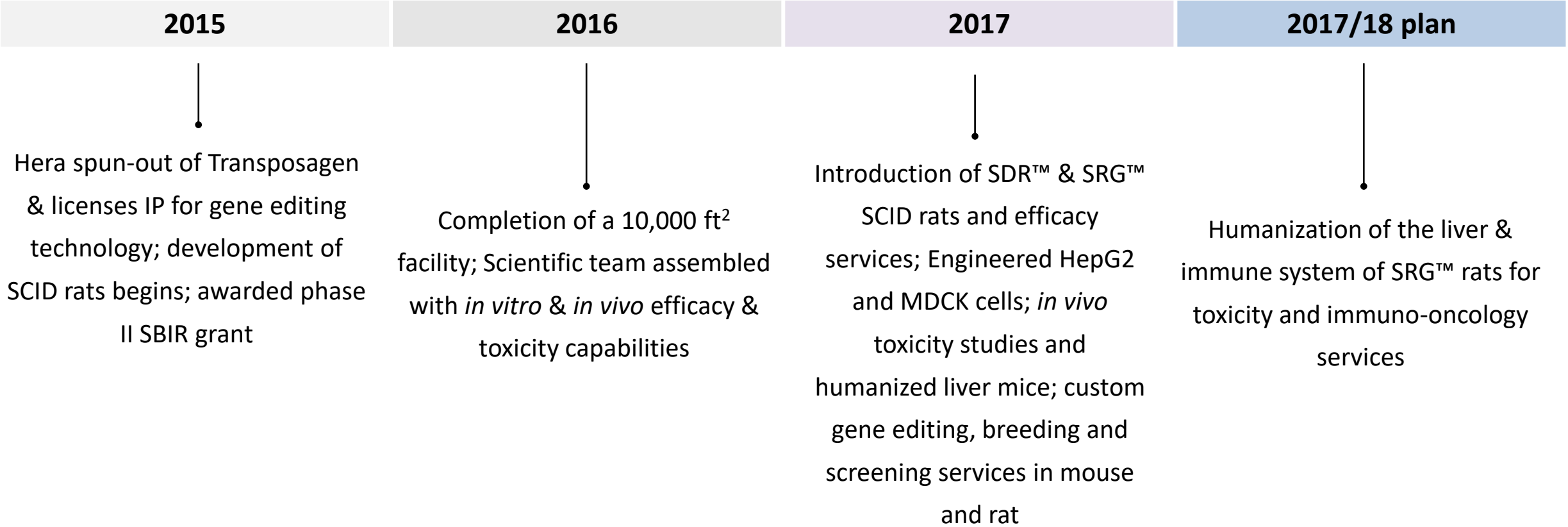
In vivo early discovery services

Studies in rat models and
genetically engineering
rodents including
“humanized” models

Hera BioLabs
services@herabiolabs.com



Precision Toxicology™ & Efficacy: utilizing precisely gene-edited models such as SCID rats, humanized rodents and engineered cell lines for producing more rapid, consistent and clinically-relevant data



Cancer Xenografts



- [Xenograft/PDX Efficacy studies](#)
- [Off-the-shelf SCID rats models](#)

In Vivo & In Vitro Lead Optimization, Toxicity and Metabolism



- [HepG2-CYP™ metabolism and toxicity cell panel](#)
- [hu-MDCK™ humanized transporter cells](#)
- [Humanized liver rodent models](#)
- [*In vivo* early discovery services](#)

Disease Modeling



- [*In vivo* liver gene delivery for disease model creation and gene therapy efficacy](#)
- [Custom genome engineering in rat and mouse](#)
- [Colony management and phenotyping](#)

Links for specific product and service information above

Blood collection from live animals:

- Tail vein
- Jugular vein
- Saphenous vein

Urine collection

Traditional serum chemistry panels for clinical pathology

Full necropsy of all organs, including images if desired

Fixation or flash freezing of organs

Histopathology, immunohistochemistry

Study 1 (alpha-naphthyl isothiocyanate/ANIT):

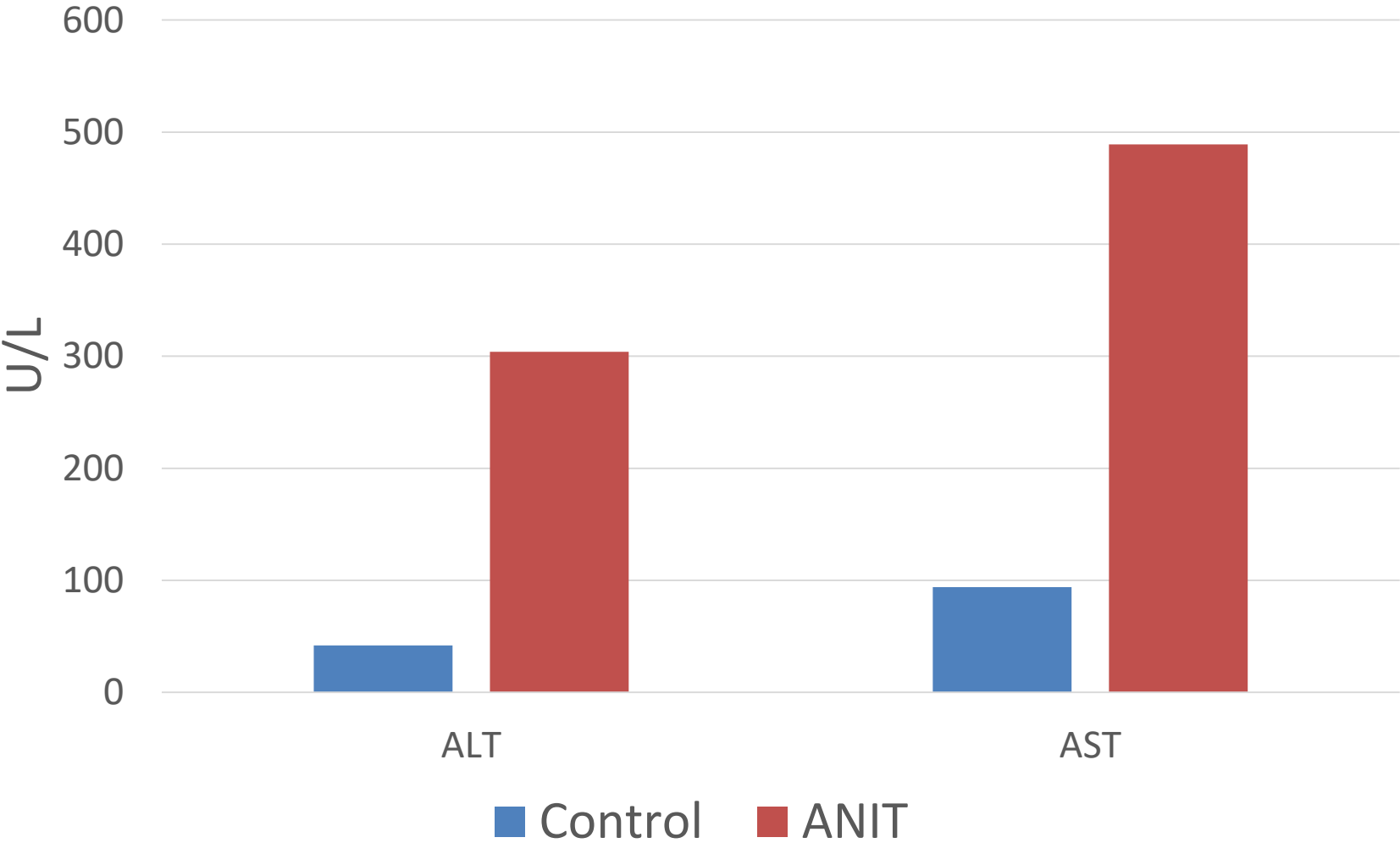
- 75mg/kg dosed IP on days 0, 1, 2 (3 doses, analysis 48 hours post-dose)
- Blood collection via cardiac puncture for clinical pathology on day 3
- Liver extracted, fixed, and processed for histopathology on day 3

Study 2 (CCl₄):

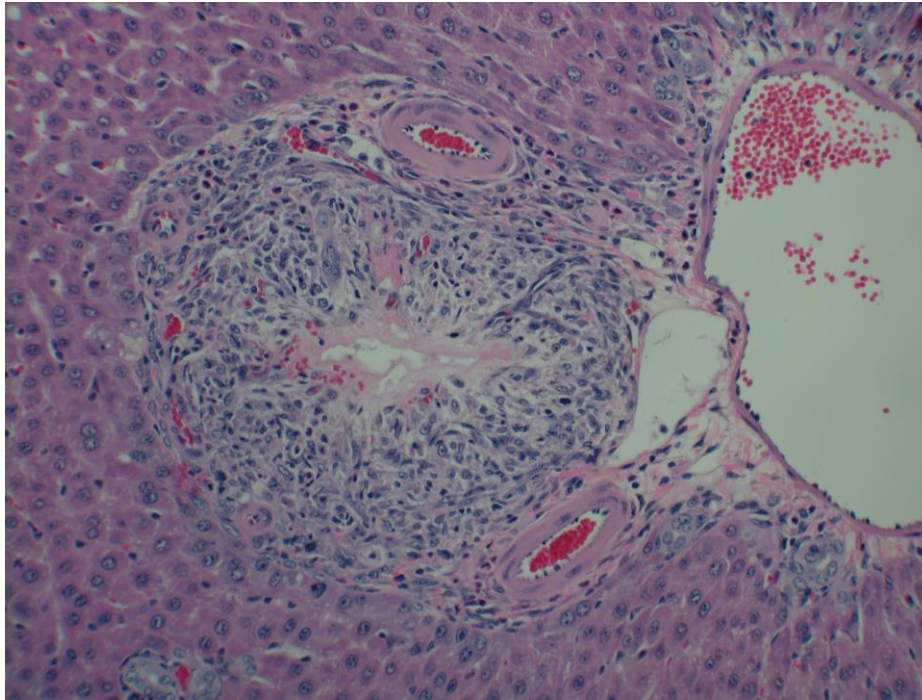
- 5ml/kg dosed PO on days 0, 1 (2 doses, analysis 48 hours post-dose)
- Blood collection via cardiac puncture for clinical pathology on day 3
- Liver extracted, fixed, and processed for histopathology on day 3

Study 3 (CCl₄): to optimize hepatotoxicity levels for downstream studies

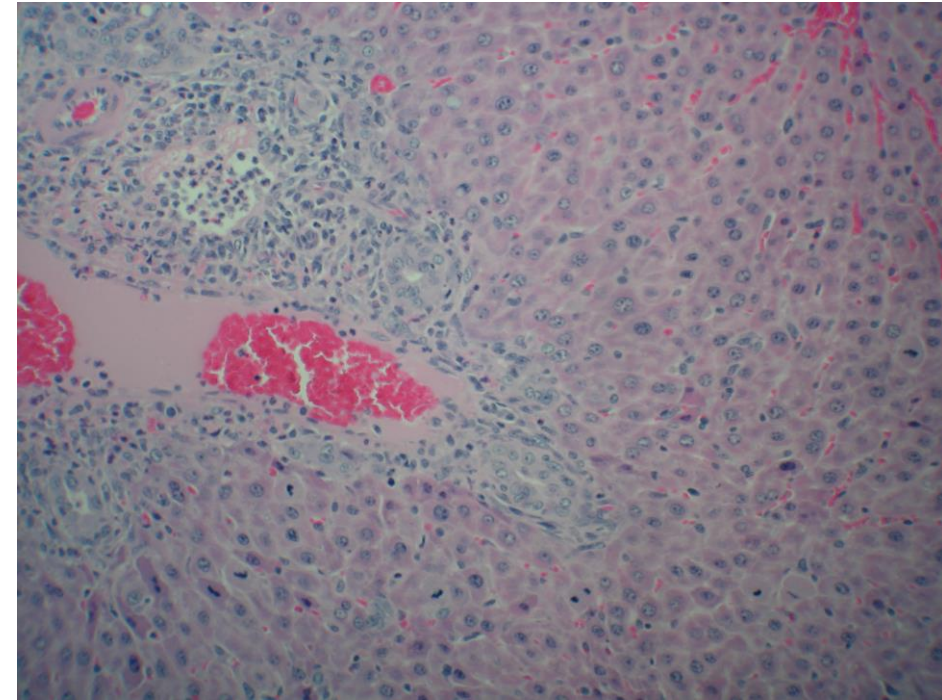
- 5ml/kg dosed PO on days 0, 1, 2 (3 doses, analysis <24 hours post-dose)
- Blood collection via cardiac puncture for clinical pathology on day 3
- Liver extracted, fixed, and processed for histopathology on day 3 (results pending)



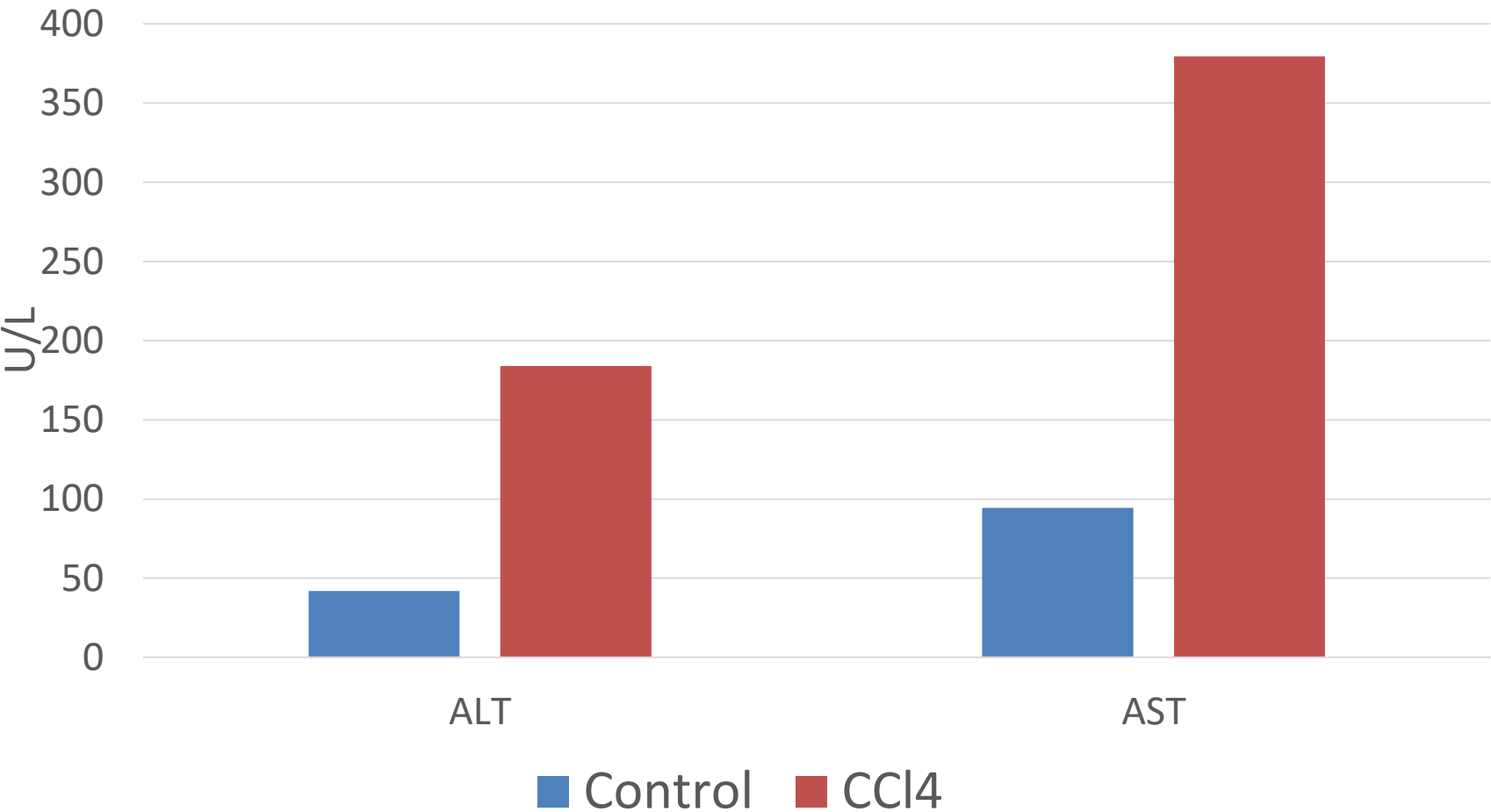
Average serum chemistry data from animals treated with vehicle control or ANIT



Bile duct inflammatory
changes

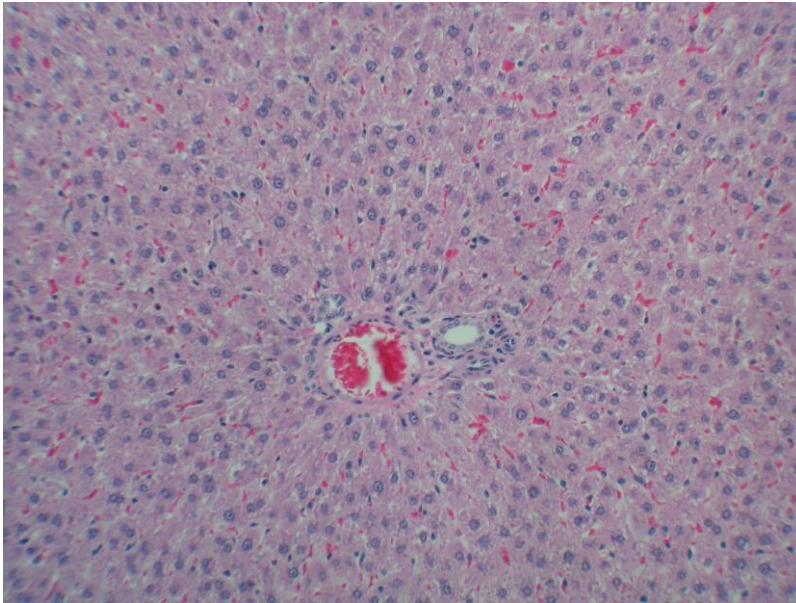


Portal changes: bile duct epithelial
hypertrophy and hyperplasia;
inflammatory cell infiltration;
increased mitotic activity



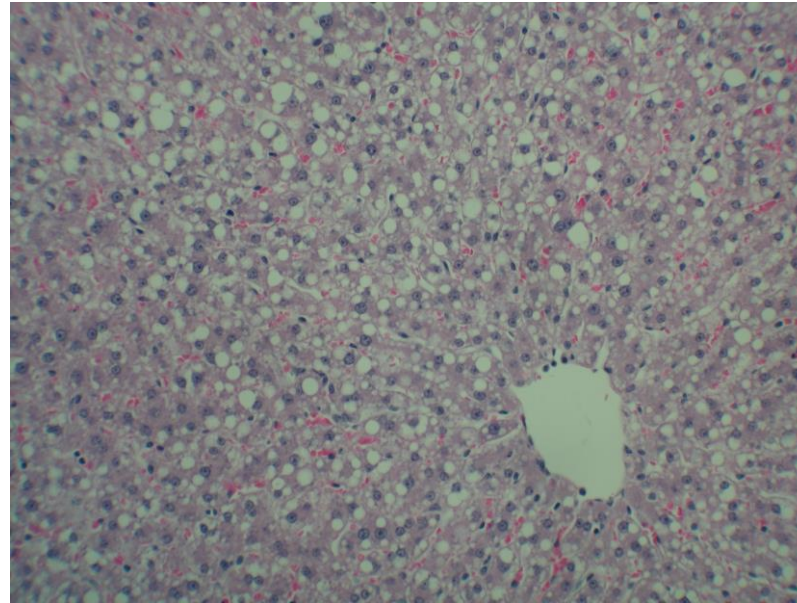
Average serum chemistry data from animals treated with vehicle control or CCl₄

Control

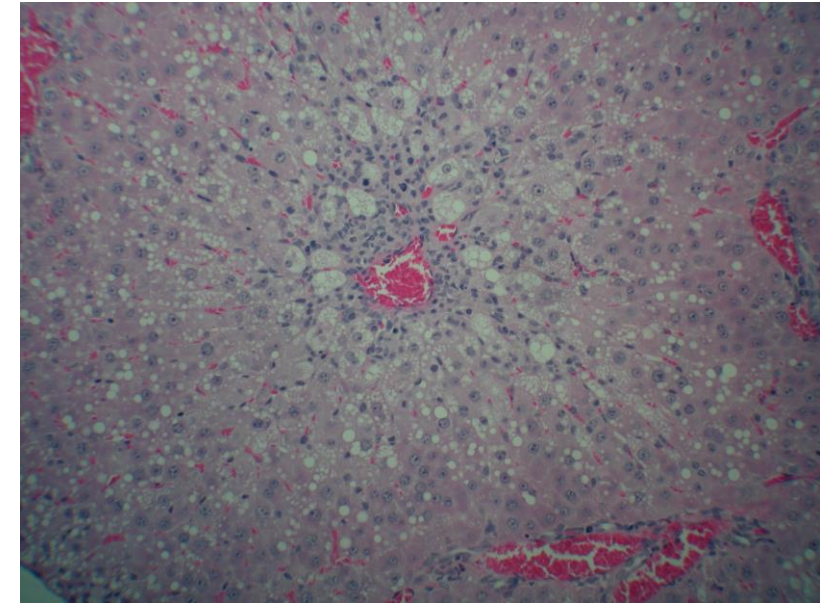


No significant change

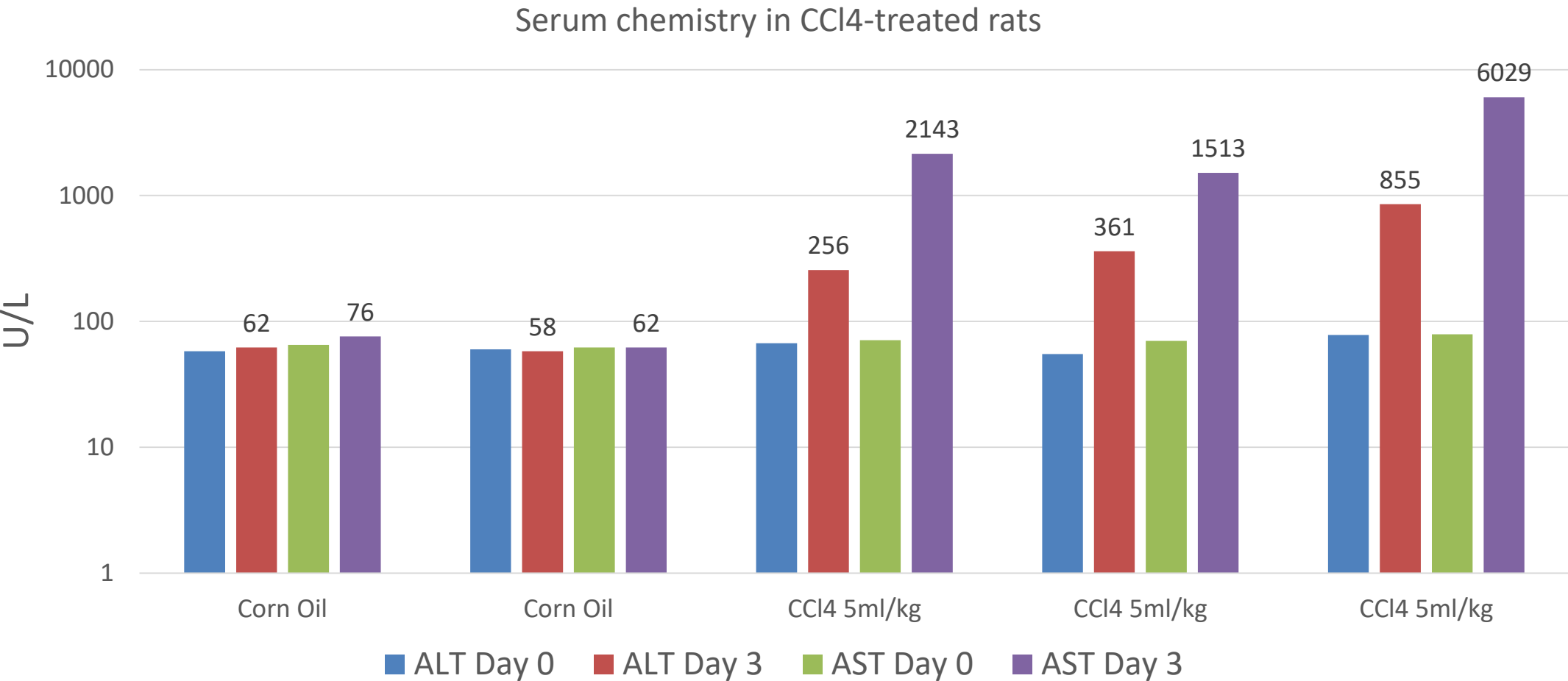
CCl₄-treated



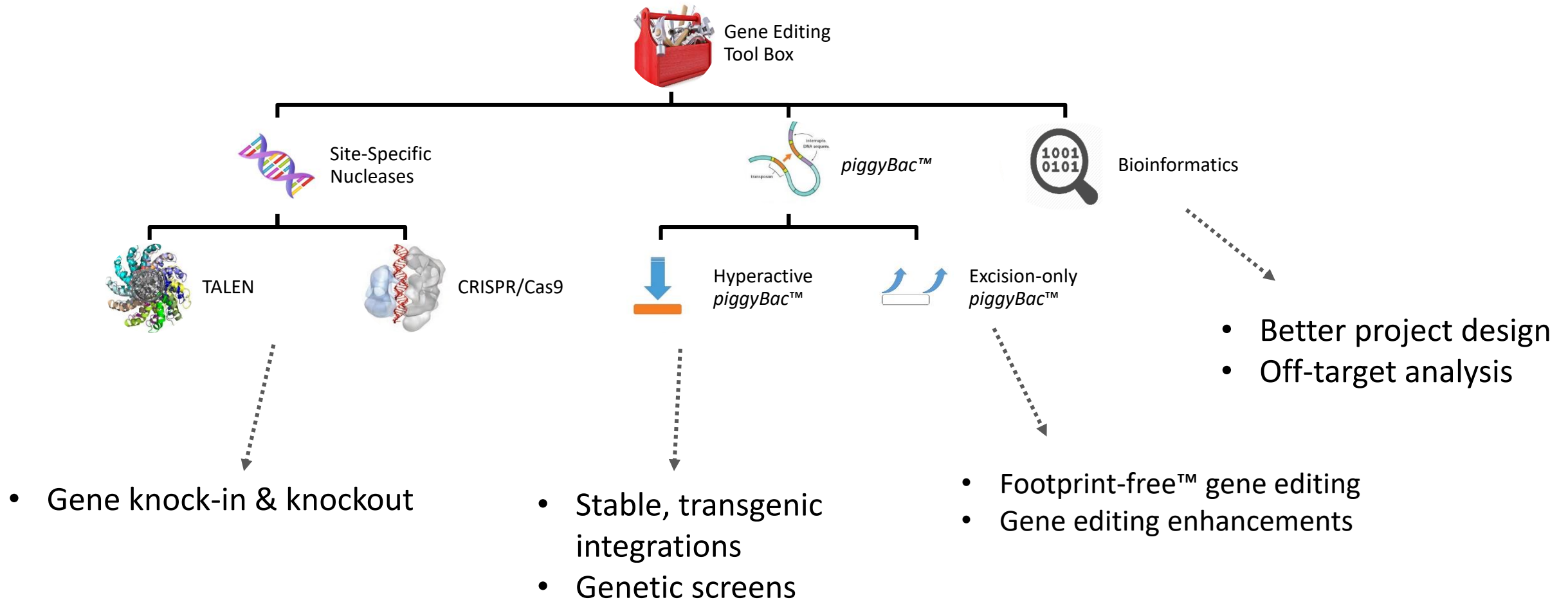
Cytoplasmic vacuolation,
moderate to severe



Cytoplasmic vacuolation,
centrilobular fibrosis,
mononuclear cell
infiltration



Data from 2 control animals and 3 animals treated with CCl₄



🧬 Hera's gene editing tool box for product development

🧬 Custom gene editing, phenotyping and screening services in cells, rats & mice available

Hera's facility and scientific team



- 🧬 Dosing by multiple routes including i.p., oral and i.v.
- 🧬 ACLAM and AALAS certified staff
- 🧬 Digital data acquisition via StudyLog® systems software

- 🧬 Vivarium featuring all 100% HEPA filtered, disposable IVC caging specifically designed for immunocompromised animals
- 🧬 Molecular and cell culture facility

- 🧬 Hera has the freedom to operate through multiple licenses to issued and pending patents for CRISPR, piggyBac and TALEN gene editing technologies
- 🧬 Hera's SCID rats are covered under issued patents claiming knockout rat phenotypes for immune system disorders, SCID and cancer. US Patent Numbers: 8,558,055; 9,314,005; 8,722,964



Jack Crawford, M.S.

CEO

Formerly directed the Sales, Marketing, and Business Development Divisions at Transposagen. Experience in product development, licensing, technology and patent evaluation, and fundraising.

Fallon Noto, Ph.D.

Senior Scientist

10+ years working with mice and rats, expertise in rodent humanization, cell and tissue transplantation, microsurgery, and ethical animal care.

Tseten Yeshe, Ph.D.

VP, R & D

Former Director of R&D at Transposagen. An expert in genome editing with well-developed scientific program management skills and experience.

Kamesh Ravi, Ph.D.

Senior Scientist

10+ years of experience in preclinical oncology, cancer xenograft models, tumor efficacy studies and onco-nephrology.

Chris Chengelis, Ph.D.,

DABT

Senior Scientific Advisor

Former CSO at WIL Research. 35 years+ experience in the preclinical toxicology industry, facility design, study design and execution

Goutham Narla, M.D., Ph.D.

SAB Member & Consultant

The Pardee Gerstaecker Professor of Cancer Research and a Medical geneticist at Case Western Reserve University. CSO and Scientific Founder of Dual Therapeutics, Inc. Expertise in cancer genetics and xenograft and transgenic models of cancer with over 58 publications in the field.

Contact Us: services@herabiolabs.com 859-414-0648
2277 Thunderstick Dr. #500 Lexington, KY 40505