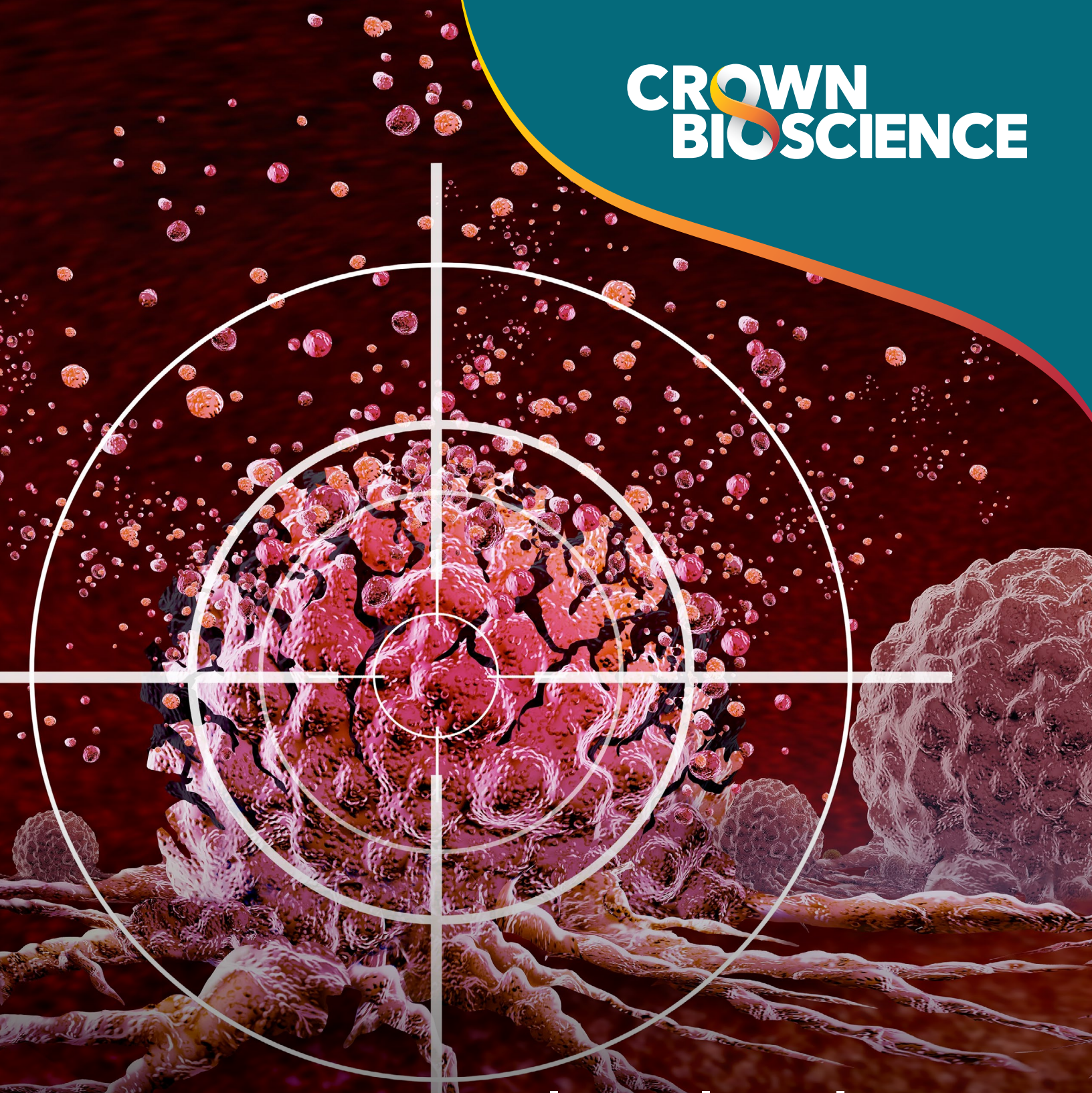
CROWN BIOSCIENCE



PDX Mouse Clinical Trials

Enhancing clinical translation, identifying actionable biomarkers, uncovering new indications, and gaining deeper insights into drug response

A JSR Life Sciences Company

FACTSHEET

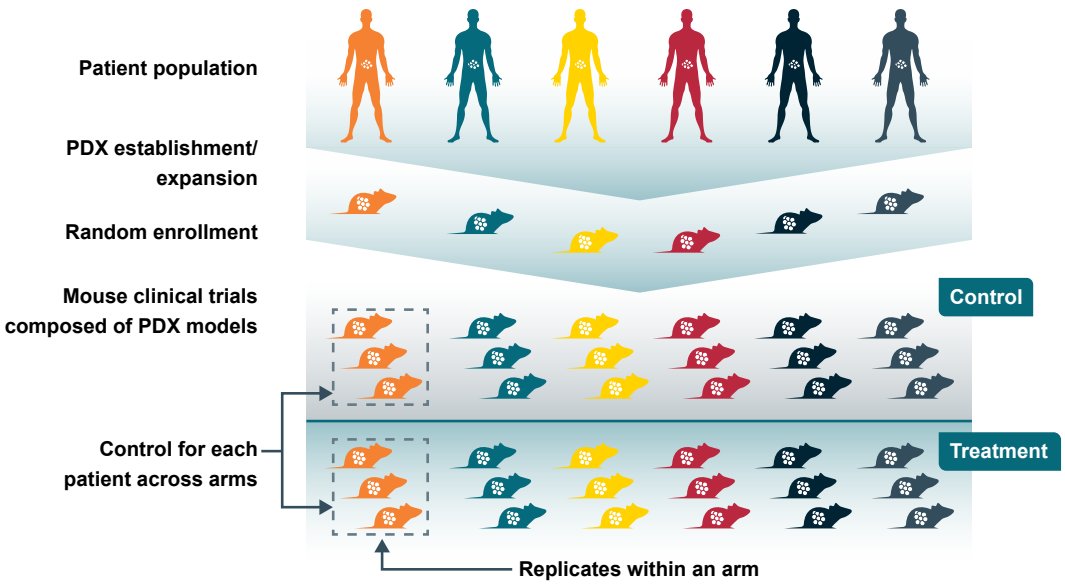
The Challenge: Enhancing Clinical Translation in Oncology Drug Development

Many oncology therapies fail clinical trials—especially in Phase II—due to a lack of efficacy. This underscores the need for more predictive preclinical models that better mirror human responses and improve clinical trial success rates.

Our Solution: PDX Mouse Clinical Trials
(Previously known as HuTrial)

Patient-Derived Xenograft (PDX) Models have transformed preclinical oncology research by offering more clinically relevant data. By preserving the key features of patient tumors, PDX models provide a powerful tool for drug development and clinical translation. These models help bridge the gap between preclinical studies and clinical success, offering oncology drug developers a reliable pathway to more accurate predictions and outcomes.

A representative PDX Mouse Clinical Trial Design



Why Choose PDX Mouse Clinical Trials?

PDX Mouse Clinical Trials (MCT) offer a unique advantage for oncology drug developers by providing:

- **Better Clinical Translation:** PDX models closely mimic human tumor biology, maintaining key features such as the genetic and phenotypic characteristics of patient tumors, leading to more accurate predictions of clinical outcomes.
- **Predictive Biomarker Discovery:** These models help identify biomarkers for patient stratification, enabling more personalized treatment strategies and increasing the likelihood of clinical trial success.
- **Exploration of New Indications:** PDX models allow for the evaluation of therapies across diverse tumor types, uncovering potential new therapeutic applications and expanding indications.
- **Deeper Drug Response Insights:** Gain a deeper understanding of drug efficacy, mechanisms of action (MoA), and resistance mechanisms. PDX models are invaluable for optimizing drug combinations and reducing attrition in clinical development.

Why Choose Crown Bioscience for PDX Mouse Clinical Trials?

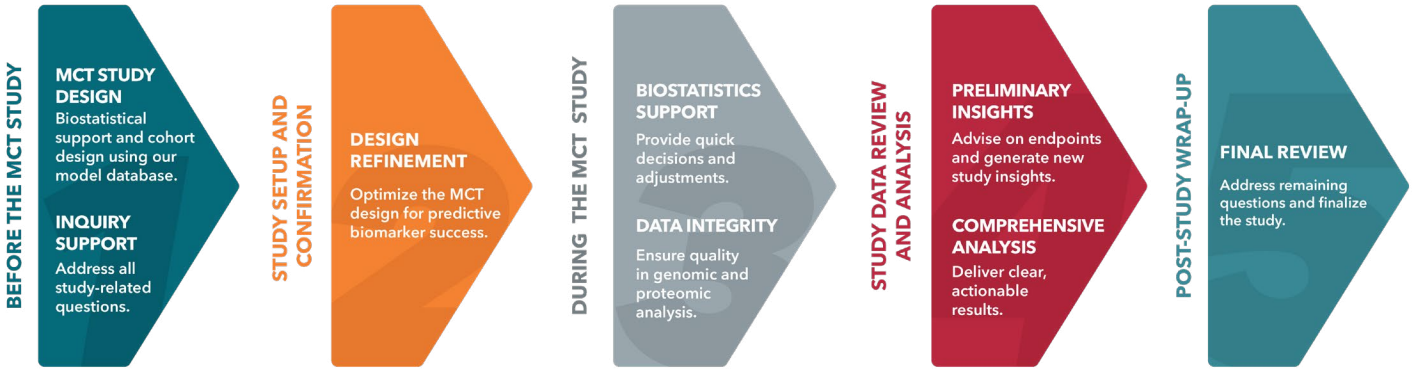
The PDX Expert:

- **Largest Commercial PDX Collection and Quality**
  - Better representation of patient populations
  - >500 live PDX models for fast-track service
  - Patented NGS QC Method ensures the highest PDX model quality
- **Accurate Biomarker Assay & Data Interpretation**
  - Our specialized methodologies ensure precise biomarker analysis, even with complex mixed tumor tissues in PDXs[1-3]

MCT Data Science Support:

- **Bioinformatics Expertise**
  - Expert design of optimized, cost-efficient, data-driven MCTs[4]
- **Tailored Bioinformatics Consultation**
  - Receive biostatistical and bioinformatics support, including model selection and study design consultation
- **End-to-End Service**
  - Complete support from trial design to data analysis, ensuring seamless execution

PDX Mouse Clinical Trial Data Science Expert Support



Rely on the Experts for Accurate PDX Biomarker Insights

PDX models are among the most predictive of patient tumors, but they come with unique challenges. After human tumor fragments are engrafted into immunodeficient mice, human stroma is quickly replaced by mouse cells, including immune components and blood vessels. This can complicate biomarker analysis and data interpretation, potentially leading to misleading results if human and mouse signals aren't properly distinguished[1,2].

With our deep expertise and a proven track record of publications[1-3], Crown Bioscience leads the field in overcoming these challenges, delivering reliable, actionable insights that drive successful oncology research.

Step by Step Guide for Mouse Clinical Trials

DESIGN

MCT can be flexible to fit study objectives

- Design and powering are considered alongside study goals
- Inclusion/exclusion criteria identified
- Sample size for statistical significance i.e. number of patients, N per group
- Endpoints and samples required for downstream analysis

1

SELECT

Model selection guidance to minimize impact on study design and execution

- Search and select the most appropriate preclinical models using HuBase™
- Live status and site availability
- Protocols tailored to the size of study, location or number of model and samples needed

2

EXECUTE

>12 years of experience in MCT and >300 MCT conducted

- Logistics, timelines, staggered enrollment, data and sample collection managed under one protocol
- Efficient management for multi-center studies
- View data live via CrownLink™ Customer Portal

3

ANALYSE

Data analysis, correlation and interpretation

- Evaluation of drug effect on tumor size, adverse effects and survival
- Identifying outliers
- Applying RECIST criteria to responder versus non responder
- Explore/validate drug MoA
- Identify genetic features associated with drug response or lack of response
- Biomarker analysis

4

TRANSLATE

Apply deep learning to translate MCT to clinical trials

- Identify potential biomarker of response (single or composite)
- Patient stratification for precision medicine
- Provide guidance on future clinical trials
- Drug positioning or re-positioning
- Drug combination strategies

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Applications of PDX Mouse Clinical Trials in Oncology

PDX Mouse Clinical Trials support diverse oncology research areas, helping to drive better clinical translation and drug development outcomes:

- **Biomarker Discovery & Validation**
  PDX models closely mimic human tumor biology, maintaining key features such as the genetic and phenotypic characteristics of patient tumors, leading to more accurate predictions of clinical outcomes.
- **Clinical Stratification**
  Generate precise data to support targeted therapies, improving patient selection and enhancing treatment efficacy.
- **Exploring New Indications**
  Investigate therapies across various cancer types, discovering new therapeutic uses and expanding treatment possibilities.
- **Targeted Research**
  Focus on specific genetic mutations or cancer drivers to refine therapeutic approaches and advance precision medicine.
- **Drug Combination Strategies**
  Evaluate drug combinations to overcome resistance and optimize treatment responses, backed by our innovative in vivo synergy assessments for enhanced sensitivity and accuracy[5].

Delivering Comprehensive Solutions in PDX Mouse Clinical Trials

Our PDX Mouse Clinical Trials are designed to maximize the impact of your oncology research by offering:

- **Optimized Clinical Trial Designs**
  Tailored to maximize predictive power and ensure clinical relevance, setting your studies up for success in oncology drug development.
- **Integrated Data Reports**
  Our comprehensive reports combine biomarker discovery, PK/PD analysis, and bioinformatics to provide a holistic view of your study's outcomes.
- **Seamless Service**
  From trial initiation to final report, our dedicated team ensures consistency, quality, and efficiency at every stage, empowering you to confidently advance in your drug development journey.

References

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