

FLEXIBILITY FOR A SUCCESSFUL PARTNERSHIP

Preclinical Oncology Success: rapidly establishing relevant preclinical models case study

A pharmaceutical company was aiming to develop patient-derived xenograft (PDX) mouse models using fresh tissue samples from patients treated at their academic oncology center partner.

PDX model development is complicated by the requirement for fresh patient surgical samples, the short notice given for consented patient samples, the need to maintain “shelf-ready” mice for implantation within 24 hours of sample collection, and the need for highly trained technical staff. In a model system where success rates hover around 50%, these requirements are in place to optimize the chance of tumor engraftment.

In a recent example a client experienced internal difficulties in effectively establishing PDX mouse models and sought consultation to improve the process. As such, Covance was engaged to provide assistance in PDX mouse model generation, sample logistics and long-term sample storage, with a goal of producing 50 PDX mouse models from the collaboration.

Understanding the Challenge

- ▶ **Flexibility and efficiency:** responding to short notice demands of fresh surgical samples and aligning resource delivery with client’s academic partner
- ▶ **Collaboration and communication:** working with client’s academic partner to establish technical expertise and provide mice prepositioned for implantation in desired timeframe
- ▶ **Preclinical expertise and results:** providing depth of knowledge and understanding of mouse model generation and maintenance
- ▶ **Problem solving and innovation:** establishing new preclinical models and processes to optimize PDX mouse model generation

Key Takeways

- ▶ Generation of PDX mouse models requires the availability of mice ready for implantation within a short time frame.
- ▶ Covance worked closely with both the client and their academic oncology center partner to coordinate expert guidance on sample handling, shipment and implantation.
- ▶ The client received PDX mouse models, made using safely delivered, fresh patient samples and mice ready for implantation.

Results

- ▶ A small colony of mice were maintained ready for tissue implantation
- ▶ New PDX technical processes were established, including implantation procedures, cryoarchiving of PDX samples and efficacy testing services
- ▶ A relationship with the client's academic oncology center was formed, enabling effective management of sample handling and timely notification of shipment

By forming direct relationships with the client's academic medical center partner, we were able to achieve the client's primary goal: to successfully implant patient-derived xenografts by ensuring the technical staff and mice were ready for immediate implantation despite the short notice of tumor availability from consented patients.

The Bottom Line

This collaborative project revealed the importance of communication and flexibility. A strong relationship with the client's academic partner yielded a streamlined and effective process for creating the PDX mouse model.

We coordinated and produced PDX mouse models in a safe and timely manner for the client using fresh patient samples provided by the client's academic partner. Working closely with the academic oncology center optimized logistics and improved the chance for optimal sample engraftment.

This was a new service offering for us and through the relationships formed and the product delivered have opened up opportunities to work with the client on PDX mouse models that they had previously archived. We can now also apply the skills used in this collaboration across various opportunities with different clients.

Learn more about our drug development solutions at www.covance.com

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