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Oncology Models

We offer comprehensive preclinical oncology services using both xenograft and syngeneic tumour models in rodents. Our capabilities include human tumour cell line-derived xenografts and immunocompetent syngeneic models to evaluate efficacy, pharmacokinetics, and immune response. With expertise in tumour implantation, monitoring, and biomarker analysis, we deliver robust, translational data to accelerate cancer drug development.

Available Xenograft Models *(validated with relevant biomarker assays)*

- **Breast (MDA-MB-231)**
- **Skin (A431)**
- **Lung (A549)**

Non-Small Cell Lung Cancer (NSCLC) Xenograft Tumour Model

Xenograft models, which involve implanting human cells into immunodeficient mice, are widely used to study tumour biology and evaluate the effectiveness of anticancer therapies in a relevant *in vivo* environment. These models allow researchers to investigate tumour growth, angiogenesis, and drug resistance, which are essential for facilitating preclinical evaluations of new human-targeted therapies.

Non-small cell lung cancer (NSCLC) is the most prevalent form of lung cancer, accounting for approximately 85% of cases, and includes subtypes such as adenocarcinoma, squamous cell carcinoma, and large cell carcinoma. The A549 cell line, derived from a Caucasian male with pulmonary adenocarcinoma, is a widely used model for studying NSCLC and evaluating the efficacy of novel therapeutics. This model enables preclinical assessment of tumour growth, metastasis, and therapeutic responses in a controlled *in vivo* environment. Furthermore, it offers valuable insights into the molecular

mechanisms underlying tumour progression and treatment responses targeting specific human cancer pathways. Our developed A549 xenograft model has shown significant responsiveness to chemotherapeutic agents, supporting its utility in the preclinical evaluation of potential treatments for lung cancer.

❑ Model Description

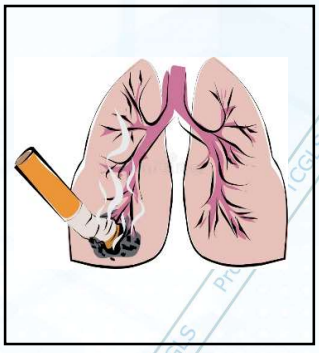
Cancer Type	Lung Cancer
Model Name	A549
Mouse Strain	BALB/c Nude
SOC	Doxorubicin

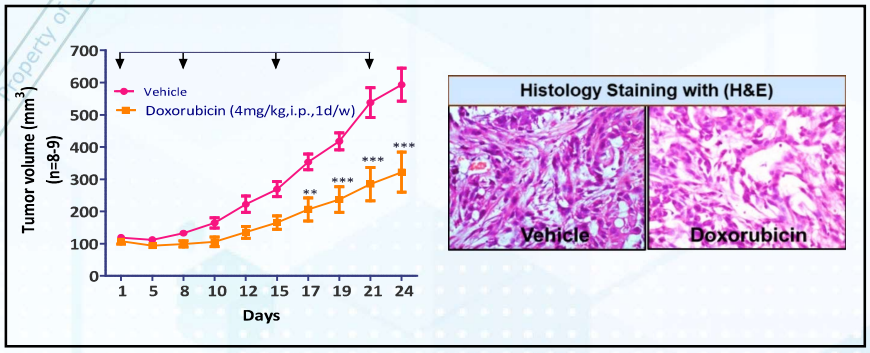
❑ Study Activity

- Subcutaneous implantation of A549 cells
- Randomisation according to tumour sizes
- Tumour volume measured at frequent intervals
- Body weight measured at regular intervals
- Clinical sign monitoring on a daily basis
- **Test agents** can be administered via multiple routes
- **Sample collection** for tumour analysis by multiple phenotypic evaluation

❑ Validation of A549 Model

Readouts





- **Colon (HCT-116)**
- **Prostate (PC-3)**

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Available Syngeneic Models *(validated with relevant biomarker assays)*

- **Colon (CT26.WT)**
  Syngeneic Mouse Model Subcutaneous

❑ Syngeneic Tumour Models

Syngeneic mouse models play a crucial role as preclinical research tools in the discovery of immuno-oncology drugs.

This type of tumour model involves implanting a wide variety of tumour cells (either solid or liquid tumour) in mice. In this model, tumour cells are engrafted into the mice, and there is relatively less chance of rejection by the host. Furthermore, this type of model allows researchers to evaluate potential anticancer drugs in an *in vivo* system with an intact murine immune system.

The CT26 colon carcinoma preclinical model is one of the platform models used to evaluate immuno-oncology-based potential candidates. This tumour model is highly immunogenic and has shown responses to immune checkpoint inhibitors.

❑ Model Description

Cancer Type	Colon Cancer
Model Name	CT26WT
Mouse Strain	BALB/c
SOC Data Available	Anti-PD-1

❑ Study Activity

- Subcutaneous implantation of CT26WT cells
- Randomisation according to tumour sizes
- Tumour volume measured with frequent intervals
- Body weight measured with frequent intervals
- Clinical sign monitoring on a daily basis
- **Sample collection** for flow cytometry, immunohistopathology & PK analysis
- **Test compounds** can be administered via different routes in mice

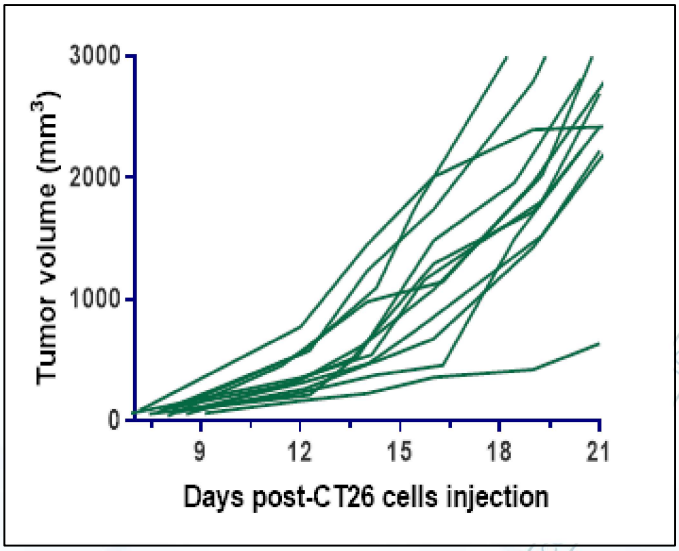

Figure 1: CT26WT tumour growth curve

❑ Validation of CT26WT Model

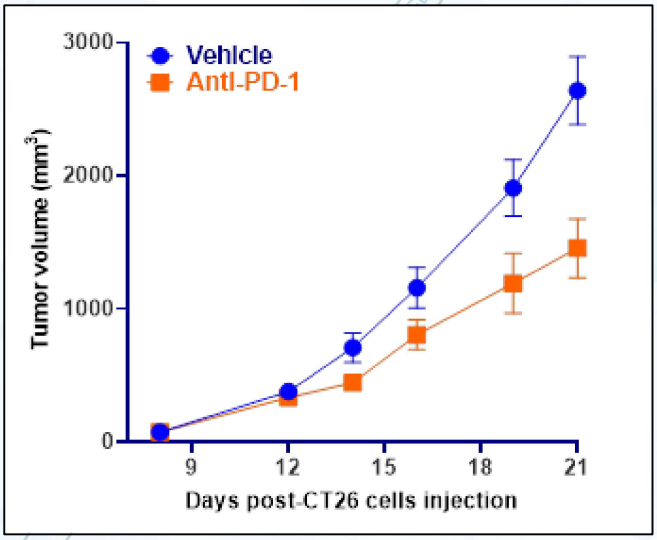

Figure 2: Anti-PD-1 response in CT26WT model. Tumour volume, mean +/-SEM

❑ Flow Cytometry Analysis to Understand Tumour Microenvironment

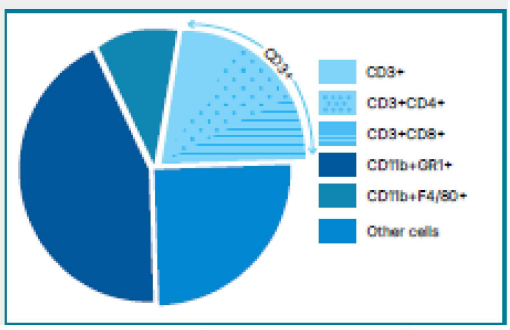

Figure 3: Representative distribution of immune cells in tumours

The mode of action of immune therapies can be evaluated via the detection of changes in the frequency of tumour-infiltrating immune cells.

❑ Immunohistochemical (IHC) Analysis to Understand Tumour Immune Cell Infiltration

In situ infiltration of immune cells in tumours can be evaluated by IHC, with relevant biomarkers detected to assess the immune therapies.

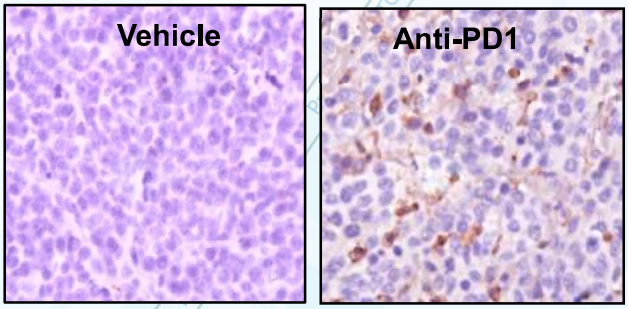

Figure 4: Infiltration of CD8-positive cells

✓ ***Further model customisation as per need***

- **Breast (EMT-6)**
  Portfolio expansion in progress

Key Features

1. Xenograft and syngeneic tumour models in rodents
2. Biomarker assay validation for each model
3. Expertise in efficacy, PK, and immune response evaluation
4. Robust translational datasets for oncology research

More Information
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