



CANCER AND CARCINOGENESIS

Lovelace Biomedical has a long and storied history in the development and implementation of unique animal models for early and definitive proof of principal efficacy assessment of drugs and vaccines in cancer and other diseases. We currently retain over 110 efficacy animal models. Through partnership and development, our list of offerings continues to increase and evolve. Our Cancer and Carcinogenesis program is an integral part of the Life Sciences Division at Lovelace Biomedical. We have been in existence for over 60 years and continue striving to provide cutting edge science and discovery sciences to our pharmaceutical partners.

CURRENT OFFERINGS IN CANCER AND CARCINOGENESIS ASSESSMENT

- In vitro
 - Full cell culture, flow cytometry, cloning, cell line development, etc.
- Cell Lines
 - Access to hundreds of human and murine transformed and primary cell lines for basic science and efficacy assessments

ANIMAL TUMOR MODELS

- Xenografts
 - Experience with obtaining and breeding 60+ strains of mice
 - Housing and maintenance for immunodeficient mouse strains
 - Development and implantation of multiple xenograft models
- Orthotopic
 - Historical development of orthotopic models for pharmaceutical testing
- BSL-2/3; Xenograft Capabilities
 - Full containment for BSL-2/3 viral and bacterial challenges
 - Combined xenograft-viral tumor and bacterial challenge capabilities
- Carcinogenesis
 - A/J mouse/NNK full carcinogenesis model

ENDPOINT ASSESSMENTS

- Histopathology
 - Multispecies and full tumor characterization
- Imaging
 - NanoSPECT/CT, MicroPET, small animal MRI
- Molecular Endpoints
 - Standard rtPCR-based techniques, gene expression, array technology, deep Sequencing, cell death, cell cycle and cell migration assays, specific gene-based DNA methylation, genome wide DNA methylation status

PUBLICATIONS

- Kuehl, P., Belinsky, S. et al., (2018) *Inhalation delivery of topotecan is superior to intravenous exposure for suppressing lung cancer in a preclinical model*, Drug Delivery, 25:1, 1127-1136, DOI: 10.1080/10717544.2018.1469688
- Belinsky, S. et al., (2001) *Refinement of an Orthotopic Lung Cancer Model in the Nude Rat*, Vet Pathology 38: 483-490
- Kuehl, P.J., Belinsky, S.A., et al., *5-Azacytidine Inhaled Dry Powder Formulation Profoundly Improves Pharmacokinetics and Efficacy for Lung Cancer Therapy Through Genome Reprograming*, British Journal of Cancer. 122, 1194-1204, 2020