SRI Biosciences’ Center for Cancer Research is proficient in offering clients a complete range of standard and innovative testing capabilities in state-of-the-art facilities. We work closely with clients to ensure that we provide the services they need to advance their drug programs; from high throughput (HTS) and high content screening (HCS), to designing and performing in vitro assays and in vivo efficacy studies, with supportive molecular biology, biochemistry, imaging, and histopathology services, as well as on-site irradiator capabilities.

To facilitate the evaluation of anticancer agents, SRI offers a wide variety of tumor models and offers analysis of biomarkers and pharmacodynamic endpoints. SRI scientists are skilled in the design, development, validation, and execution of in vitro, in vivo, and ex vivo efficacy models. Clients benefit from our expertise in developing and offering both patient-derived primary tumor (PDX) xenograft models and traditional cell line derived murine xenografts. PDX models recapitulate the heterogeneity hallmark of human cancers, increasing the correlation to the human response, and are thus valuable for clinical translation. We offer novel experimental tumor metastasis models with imaging detection and analysis of rare cells in blood (circulating tumor cells – CTC) and bone marrow. Study offerings include tumorigenicity, tumor drug resistance, and cancer recurrence.

Our in vitro and in vivo efficacy services include:

**In Vitro Assays**
- Proliferation, autophagy, and growth inhibition (tumor and endothelial cells)
- Apoptosis (tumor and endothelial cells)
- Cell cycle and apoptosis analysis with flow cytometry
- Migration and invasion (Matrigel® and fibrin gel)
- Receptor binding and activity
- Protease activity with zymogels
- RNA isolation, PCR, RT-PCR, SuperArray®
- Target effectiveness on treated tissues with biochemical assays
- Customized assays
- Angiogenesis
  - Endothelial proliferation, migration, tube formation
  - Ex ovo chick chorioallantoic membrane assay (CAM)

SRI is experienced with PDX models, and over 80 cancer & primary cell lines

**In Vivo Efficacy Expertise – Xenograft Models**
- Patient derived (PDX) primary tumor xenograft – orthotopic including: breast, pancreas, prostate, colon, brain, lung, AML
- Human tumor cell line derived murine xenograft models - orthotopic and subcutaneous
  - More than 18 human tumor tissue types, and more than 80 cell lines are available at SRI; including: breast, cervical, colon, fibrosarcoma, glioblastoma, kidney, leukemia, liver, lung, medulloblastoma, melanoma, myeloma, neuroblastoma, osteosarcoma, ovarian, pancreatic, prostate, tongue squamous carcinoma; Additional commercially available tumor-forming lines upon request
- Syngeneic mouse models Including: colon carcinoma, melanoma, pancreatic carcinoma
- Angiogenesis with in vivo human skin graft model
Services in Cell Line Testing & Banking

- Growth rates under optimized culture conditions
- IC50s for standard cancer chemotherapeutic agents
- Viability testing protocols
- Morphology and other characteristics
- In vivo tumorigenicity
- Banking
- Pathogen testing

Noninvasive Imaging Models Available

Irradiation Studies

- Because irradiation is a treatment approach for many cancers, researchers seek compounds that selectively enhance a tumor's irradiation sensitivity, protect healthy tissues, or allow increased doses to the affected areas. To address clients' needs, SRI's irradiation facilities include a Pantak HF320 X-ray source and a Mark I-68A 137Cs gamma emission source. Human xenograft, syngeneic, and in vitro models are compatible with radiation administration and can be used to evaluate compounds as radiosensitizers, radioprotectants, decellation agents, and for use in combination therapy; and SRI's scientists work closely with clients to develop novel models and customized studies.

Pathology and Follow-On Studies

- Histology
- Immunohistochemistry
- Fluorescence imaging
- Cellular hypoxia analysis
- Circulating tumor cells (CTC)
- Blood vessel density measurements
- Biochemical assays for target effectiveness
- Molecular biology assays for tissue analyses, building molecular probes, developing models, for enzymes, cytokines, other protein targets

For Other Biosciences Services

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About SRI Biosciences

SRI Biosciences carries out basic research, drug discovery and drug development, and provides contract services. SRI has all of the resources necessary to take R&D from Idea to IND and beyond™—from initial discovery to the start of human clinical trials—and specializes in cancer, immunology and inflammation, infectious disease, and neuroscience. SRI’s product pipeline has yielded marketed drugs, therapeutics currently in clinical trials, and additional programs in earlier stages. In its CRO business, SRI has helped government and other clients and partners advance well over 100 drugs into patient testing. SRI is also working to create the next generation of technologies in areas such as diagnostics, drug delivery, medical devices, and systems biology.

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