ImQuest BioSciences’ approach toward cancer research is based on the effective use of well-established and validated in vitro, ex vivo, and in vivo models to assess the efficacy and toxicity of new potential chemotherapeutic agents for the treatment of solid and hematopoietic tumors. Our OncoSENS program facilitates the development of anti-tumor agents by assessing the efficacy and potency of new therapeutic products using the OncoSENS cell-based anti-cancer screening program. The OncoSENS platform allows for the characterization of the mechanism of action of new products using cell-based, biochemical, immunologic, and -omics-based assays. The platform provides a holistic view of lead therapeutic agents by identifying and quantifying unwanted toxicity (ToxiSENS), as well as solubility and pre-formulation profiles (PharmaSENS). ImQuest BioSciences has the capability to perform all of our anti-tumor drug development assays in a GLP-compliant manner, if required. The ImQuest BioSciences’ staff has decades of experience with the efficient and cost-effective development of chemotherapeutic agents for the treatment of cancer. Our work begins with basic drug discovery screening programs and then follows a well-defined developmental pathway, guided by documents such as the FDA Guidance for Nonclinical Evaluation for Anti-Cancer Pharmaceuticals.

ImQuest BioSciences performs the following anti-cancer product development services:

**Anti-Proliferative Screening Assays**
- Cell-based anti-cancer activity evaluations using the ImQuest BioSciences' OncoSENS platform, which consists of 120 cancer cell lines for the screening of small molecules and biologics
- Clonogenic assays to complement the anti-proliferative assays, differentiating between cytotoxic and cytostatic modes of action
- Biochemical and molecular target-based screening assays

**Mechanism of Action Evaluations in Cell-based, Immunologic, and Biochemical Assays**
- Direct evaluation of specific inhibitory pathways: cell cycle arrest, apoptosis, kinases, growth factors and signal transduction
- Inhibitory pathway validation using binding studies, Q-PCR, IHC, siRNA, microarrays and flow cytometry
- Cancer immunotherapy analysis using specimens (i.e. spleens, lymph nodes, tumors, blood) to determine the MOA of novel anti-cancer therapeutic drug products
- Immunophenotyping and cytokine analysis using state-of-the-art multi-color flow cytometer, ELISA and -omics tools

**Evaluation of Combination Anti-Cancer Therapeutic Approaches**
- Statistical analysis of drug combination effects (synergy, additivity, antagonism) using highly sensitive checkerboard evaluations

**Rodent Xenograft and Other In Vivo Models of Compound Efficacy**

**Evaluation of Off-Target Effects and Safety Profiling**
- Screening for potential toxicity of lead therapeutics using ToxiSENS in primary cell lines, such as hepatocytes, kidney, cardiac and neuronal cells and PBMCs
- Screening for immune-toxic effects
- Identification of biomarkers in the preclinical or clinical setting
- Support for pharmacokinetic/pharmacodynamic studies and immunogenicity

**Pharmaceutical Profiling**
- Solubility and pre-formulation of novel drugs using PharmaSENS
- Development of product specific formulations for oral, intravenous, and other means of delivery, including the use of nanoparticles and antibody dependent conjugation