

# CERTIS

## ONCOLOGY SOLUTIONS



### A MISSION TO BEAT CANCER

With our science, oncologists can individualize precision therapies that determine the best course of treatment for their patients.

### FIRST-LINE THERAPIES OFTEN FAIL

Although significant advancements have been made in precision medicine, the system still requires physicians to approach cancer treatments as one-size-fits-all.

The standard regimen of radiation and chemotherapy therapies is imprecise. After standard treatments are exhausted, or when the tumor type is rare, oncologists don't have enough data to formulate the best therapeutic next steps. For example, most treatment choices aren't able to take into account unique genetic aspects of each patient's tumor. Unfortunately, ineffective therapies lead to lost time.

### WE ARE CHANGING THE PARADIGM

Certis Oncology's innovative science fills the need for certainty. Our precision mouse modeling technique provides oncologists with more timely and accurate selection of treatment therapies. Our science is proven: more than 40 peer-reviewed studies have been published that validate its effectiveness.

We have received our California Clinical Laboratory License and have been issued CLIA certification for High-Complexity Testing, which allows us to market our patient-directed therapy to the public. We are now going to market with these services, along with pre-clinical services, based on the same technique, that we provide to pharmaceutical and biotech companies. We are currently ramping up our operations to provide these services to a large array of cancer patients and companies developing new cancer drugs.

Oncologist-Directed  
Solutions for  
Cancer Therapy &  
Drug Discovery



Our clinically licensed  
laboratory is CLIA  
certified to perform  
high-complexity tests.

## TUMOR BANKING

Certis Oncology enables individual cancer patients to store and cryopreserve their tumors. For example, should the patient's cancer return, we can access his or her frozen tumor from our tumor bank and grow it in mice for additional drug testing and optimal therapy. We also leverage our tumor bank for pre-clinical research services. Cryopreserved tumors are extremely valuable because they can be used to test off-market, compassionate use drugs, for example. As the number of tumors in the Certis Oncology tumor bank increases, the asset value of the company also increases.

## CERTIS ONCOLOGY SERVICES

Certis derives revenue from three services:

1. Developing immortalized mouse models and cryopreserving individual patient tumors.
2. Testing potential drug therapies in these models by collaborating with oncologists to identify drug therapies that are effective and ineffective for individual patients.
3. Contract work for leading pharmaceuticals and biotech companies.

## AN EMERGING MARKET

Our primary objective is to save and extend lives. This goal, coupled with our science, has placed us at the forefront of an emerging market: Grandview Research projects that the global oncology market for live animal clinical research will reach \$1.5 billion by 2025.

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## THE BENEFIT TO ONCOLOGISTS AND PATIENTS

Certis makes a positive impact on people living with cancer. Concurrent testing of multiple drugs leveraging Orthotopic PDX models present oncologists with more treatment options – while reducing the time required to select each patient's optimal treatment.

- We test patient tumors in multiple mouse models simultaneously to determine the best course of therapy.
- The time from implantation to results is quicker than in other mouse models.
- The Certis offer includes “establishment” of tumors in mice plus cryopreservation. Drug testing is also offered as a separate service.



Orthotopic PDX provides a new method for physicians to prioritize therapies. The oncologist makes the choice.



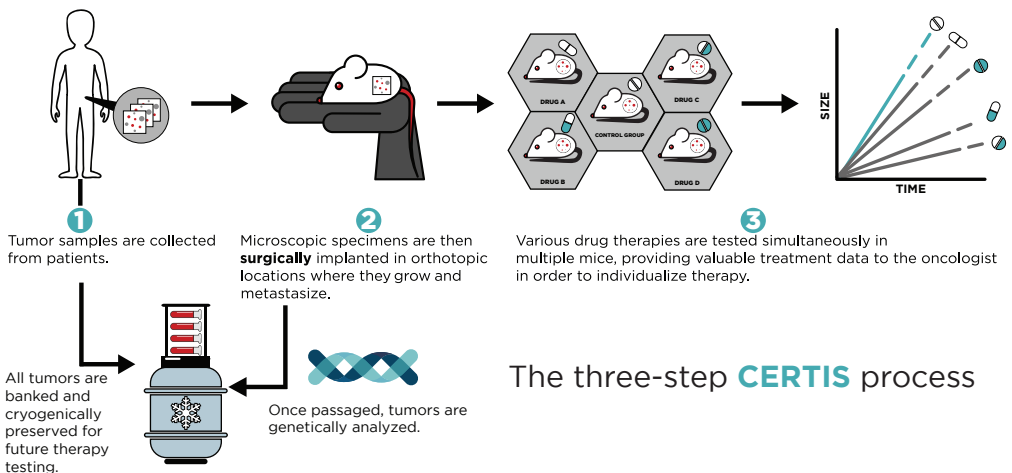
"This is about the patients. The goal is to improve and significantly impact patient's lives. And I think the ultimate individualized medicine is to have your tumor modeled."

Fritz C. Eilber, MD  
UCLA Surgery Division of Oncology

## THE CERTIS PDX TECHNIQUE

Certis services are based on a technique known as Orthotopic PDX: Patient-Derived Xenografts. (In Greek, orthotopic means "the correct place.") We take a very small specimen of the human patient's tumor and surgically implant it into the corresponding anatomic location (pancreas, liver, lung, etc.) in immunodeficient mice.

We have demonstrated the ability of our tumors to not only grow in mice at a high rate, but to also replicate tumor growth and metastasis in humans. The data created by Orthotopic PDX models has been used to obtain an experimental drug for a critically ill patient suffering from an aggressive cancer that was not in the standard treatment protocol. In this case, the data from the models resulted in FDA clearance of an off-market Investigational New Drug. The patient's life was extended by more than two years with a high quality of life.



## THE BENEFIT TO PHARMACEUTICALS AND BIOTECH

- Pharmaceutical and biotech companies contract with us to develop custom mouse models to determine the effectiveness of new drugs they are developing.
- Success with drug testing on our mice can help them determine which drugs are suitable for human clinical trials.
- We provide a more cost-effective model for developing new drugs for all types of cancers.

## A SELECTION OF ORTHOTOPIC PDX CLINICAL SERVICES

1. Guidance in selecting mouse models
2. Execution of drug screening and efficacy studies
3. Individual patient drug-efficacy information
4. Data analysis and reporting
5. Assistance writing and publishing papers
6. Assistance writing grant applications
7. Grant sub-contracting

**Certis Oncology has forged partnerships with these San Diego-based biotech leaders:**



## ABOUT CERTIS ONCOLOGY SOLUTIONS

Certis Oncology Solutions was formed in 2016 with the mission to provide individualized precision patient care. Our patient-directed therapy enables oncologists to tailor and optimize therapies for patients suffering from aggressive cancers. We also provide pre-clinical services for pharmaceutical and biotech companies.

The differentiators for all of our services are the Certis Orthotopic PDX techniques. Using our techniques, we have demonstrated the ability to rapidly grow individual patient tumors in mice at a high rate. The PDX models more accurately replicate human tumor growth, metastasis and response to therapy, making it more immediately clinically relevant than other models. Certis is affiliated with leading cancer physicians at UCLA and Memorial Sloan Kettering.



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