



FACTS about CANCER

RESEARCH & CARE

Biotechnology is Transforming Standard Cancer Therapies

Cancer. Just mention the word and your heart skips a beat. Nearly everyone has had experience with cancer through a friend, loved-one or themselves.

- Cancer's reputation is deadly, and for good reason. It is the second leading cause of death in California and the nation. Nearly half of Californians born today will develop cancer in their lifetime, and one in five will die from it.
- The good news? Incredible advances in medical care, especially through biological therapies, are making tremendous strides, and cancer-related deaths are steadily decreasing for the first time.

Cancers involve out-of-control cell growth triggered by genetic and environmental factors like smoking, sun exposure and radiation. Traditionally, only three standard treatments were available to patients—surgery, radiation and chemotherapy. While the best we had, treatments like radiation and chemotherapy do not discriminate between attacking cancer cells and healthy cells. Biotechnology has rewritten the medical textbooks and dramatically changed how we look at cancer.

California Biotechnology Companies Offer Hope Through Science and Innovation

We stand at a unique moment in the fight against cancer. Research and technology have revealed entirely new ways of seeing how our body works and how it can fight cancer. The use of biological therapy is so promising that doctors now consider it to be the fourth major method of treatment.

Biological anti-cancer drugs are only about 20 years old and are now evolving at an ever more rapid pace. For several years, scientists have used innovative DNA techniques to genetically engineer organisms to produce treatments that target specific cancers.

Biological therapies use an individual's own systems to fight cancer and to lessen the side effects that may be caused by some cancer treatments. New treatments, using the tools of biotechnology, are

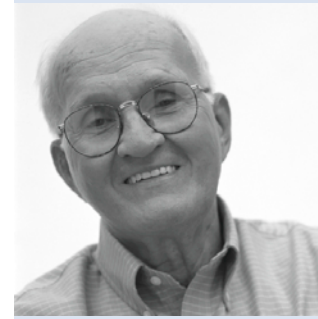
detecting cancers in earlier stages, targeting and eradicating deadly cancer cells, boosting the immune system, preventing relapse, decreasing side-effects, and improving and prolonging lives.

California's biotechnology companies are on the cutting edge of breakthrough cancer treatments with more than 250 treatments in current development to fight cancer. Nearly 60 biotech companies in California either have approved oncology-related drugs or have developed tests, devices or innovative therapies to help diagnose and treat patients with cancer.

Cancer is often no longer a death sentence, thanks to the dedication and unwavering commitment to scientific innovation by California's biotech industry.



PHOTO CREDIT: AMGEN



Camelia

At 23 years old, just a year after graduating from Stanford University, Camelia Coupal was diagnosed with Stage 3Bs Hodgkin's lymphoma. Severe anemia, uncomfortable itching, night sweats and pain in her abdomen led to a CAT scan confirming the diagnosis. Unfortunately, Camelia had witnessed cancer's effect only two years prior when her boyfriend was diagnosed with osteosarcoma. She was by his side throughout his chemotherapy treatments, but suddenly she was the one battling cancer. Originally from Venezuela, Camelia's family had been preparing to open their third restaurant in the Los Angeles area—an event that was postponed while Camelia underwent surgery and began treatment.

After her first round of chemotherapy, Camelia began receiving injections of Neulasta® (pegfilgrastim), a biologic therapeutic created by Amgen. Neulasta® can be used during certain cancer treatments to boost white blood cell counts to help protect against the risk of infection—one of the most serious potential side effects of many types of strong chemotherapy. Camelia experienced some side effects, including bone pain, from the Neulasta® injections she received after every cycle, but she said that she'd "rather have to go through the bone pain for a couple of days than have the risk of infection."

After several months of treatment, Camelia's lymphoma is currently in remission. She's started running again—an activity she enjoyed before her diagnosis—and she recently participated in a marathon to benefit the Leukemia & Lymphoma Society. Working at the newly-opened family restaurant, spending time with her boyfriend and family, Camelia is grateful for "finally being able to live [her] life again."

Lori

Lori Lober's first brush with cancer came in 1998, when she found a suspicious lump in her breast. After multiple doctor visits and three mammograms, Lori was repeatedly told it was a non-cancerous fibrocystic disease and there was nothing to worry about. But Lori knew something was not right and remained vigilant about finding out what was wrong with her body. In 2000, Lori went to another doctor. By this time, she was a stage four breast cancer patient, and the disease had metastasized to her liver. Lori was given 18 months to live.

Traditional cancer treatments at that time offered little hope of long-term survival. The odds she would even be alive five years later was less than three percent. Lori was determined to beat the odds. Through extensive research, holistic remedies and many trips to a variety of specialists, Lori learned she was a candidate for a clinical trial that included an innovative biological therapy that attacked her cancer cells while leaving her healthy cells unharmed. Her tumors responded well to the treatment, and seven years later there is no evidence of the disease in her body.

The life-altering experience left Lori deeply touched by the support she received from friends and family, causing her to form the Touched by Cancer Foundation to help and give hope to others "touched by cancer." She also wrote a book, *Bigger Than Pink: The Book I Could Not Find When I Was Diagnosed With Stage Four Cancer*, which includes her personal journey of combining both Eastern and Western medicine and the precautions that can decrease the likelihood of being diagnosed with cancer.

