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For UT prof, cancer drug adds ‘worth to my life’

By Mary Ann Roser

Lose the idea of the detached scientist laboring over his workbench until that eureka moment of discovery. University of Texas professor Jonathan Sessler has a deep, personal interest in his dogged pursuit of what could be the first brain cancer drug in its class.

Sessler fought cancer as a young adult and got the idea to invent a cancer drug from his former cancer doctor, Richard Miller, when they were at Stanford University.

The results of a pivotal clinical trial using the drug, called Xcytrin, were unveiled this week at a meeting of the American Society of Clinical Oncology in Atlanta. The drug, used in combination with radiation, helped delay the onset of the debilitating effects of brain tumors.

Sessler and Miller's company will seek Food and Drug Administration approval to sell Xcytrin, pronounced ex-SIGH-trin, to the public.

"As a former cancer patient, working with my former oncologist, Dr. Miller, to fight back against this really dreadful disease, it gives value and worth to my life as a scientist," said Sessler, 51, a professor of chemistry and biochemistry.

The drug is for people who have lung cancer that spreads to the brain. Each year, 174,470 Americans are diagnosed with lung cancer, according to the National Cancer Institute. Half of them develop brain metastases, for which there is no drug treatment, said Miller, an adjunct clinical professor in oncology at Stanford.

Sessler calls the creation of Xcytrin a combination of divine intervention, luck and hard work. Had it not been for his having cancer, meeting Miller or moving to Texas, the drug would not have happened, Sessler said. He hopes the FDA is as excited about it as he and Miller are.

If so, Sessler would join about a dozen other UT faculty members who, in recent years, have launched successful commercial enterprises with drugs or medical devices, said George Georgiou, a professor of engineering, molecular genetics and microbiology.

A year ago, UT created the Texas Institute for Drug and Diagnostics Development, known as TI-3D, to advance faculty inventions and give UT a bigger role in biotechnology. Although Sessler's work was too far along to benefit from the institute, Georgiou said he hopes the number of commercial enterprises will quickly double as the institute helps take more innovations from the laboratory to the market.

According to the FDA, for every 5,000 compounds that are evaluated in the lab and tried in animals, five make it to human testing, and of those only one wins FDA approval — a process that averages 12 years.

Miller had been treating Sessler when he was a doctoral student in chemistry at Stanford for a relapse of Hodgkin's lymphoma, a cancerous growth in the lymph system, when he challenged Sessler to create a cancer drug.

"He's the real hero behind this story," Sessler said.

Inspired, Sessler got the idea for the drug's chemical makeup the week he moved to Texas to work as an assistant professor in 1984. He was struck by the five points of the state's famous symbol, the lone star.

The decision to use five nitrogen atoms in the compound that eventually became Xcytrin instead of the four he had been working with was fateful. He wrote a proposal about using it to detect and treat cancer. On a return doctor's visit to Miller, he showed him the proposal. Miller, who has experience creating companies involving cancer drugs, was intrigued.

In June 1991, Miller and Sessler created Pharmacyclics. UT owns the intellectual property. Miller is the president and chief executive officer, and three of Sessler's former students who played key roles in the discovery also work for the company.

In the clinical trial, 554 patients from North America, Europe and Australia were studied. Patients who received Xcytrin along with radiation therapy took longer to get sicker from their brain tumors, meaning they did not develop such complications as trouble walking, talking, thinking and remembering, Miller said.

The median time for patients to get worse was 15.4 months if they received the drug and radiation, compared with 10 months for those who received radiation only, according to the findings.

"We're preventing some serious neurological complications," Miller said.

The researchers are testing Xcytrin in clinical trials for a wide range of other cancers, including leukemia, lymphoma and myeloma, Miller said.

Dr. Art Frankel, a well-known cancer researcher and Cancer Center director at Scott & White, said the drug, while not a breakthrough, is an important advancement.

"This doesn't cure. It improves survival, " he said, adding that is what most cancer drugs do.

However, he added, that's no guarantee the FDA will approve the drug application.

Sessler said it would take about six months to prepare the FDA application.

FDA spokeswoman Susan Cruzan said drugs that are life-and-death treatments get the fastest review, about six months.