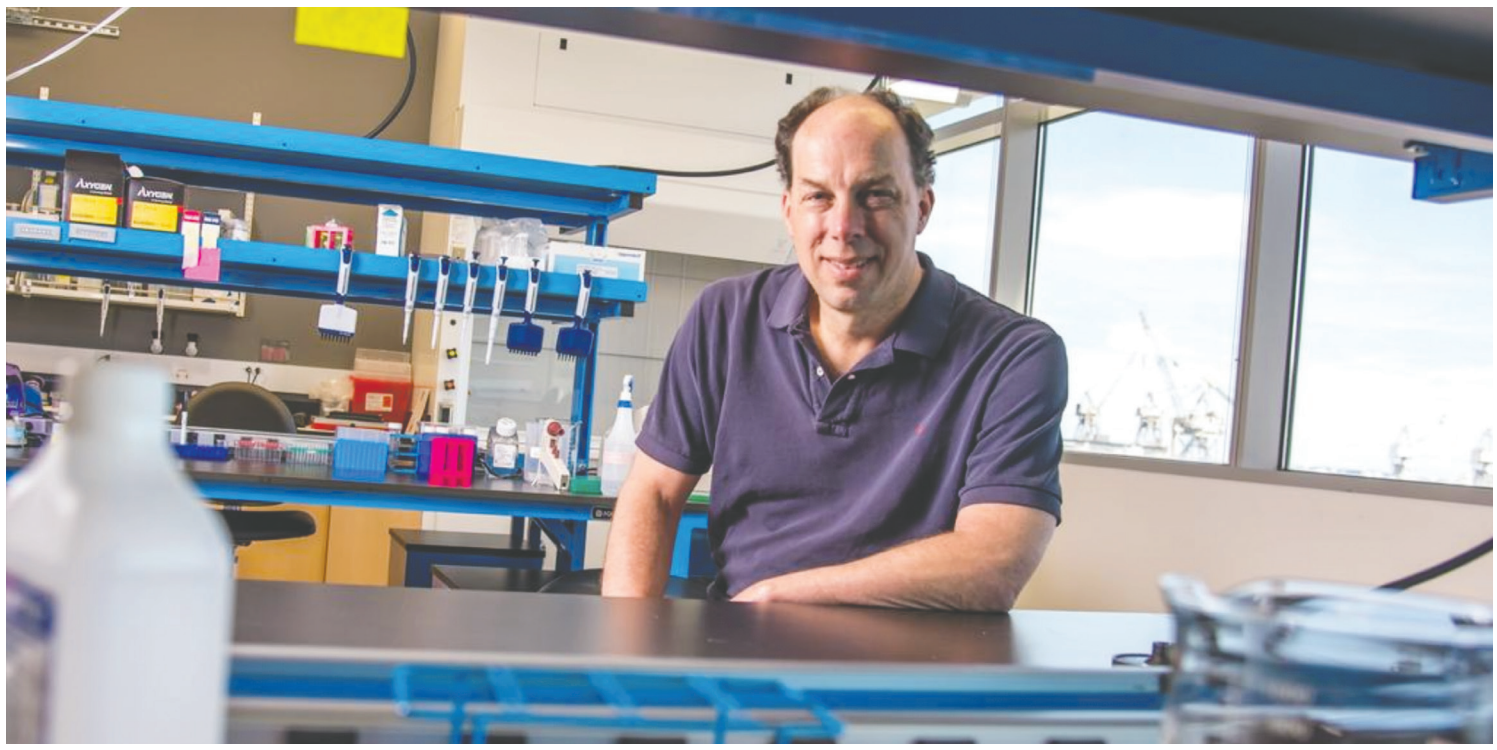
STANFORD SERIAL ENTREPRENEURS STEPHEN QUAKE AND MICHAEL CLARKE ARE AT IT AGAIN — NOW WITH A POTENTIALLY BROAD CANCER BLOCKER

BY RON LEUTY



TODD JOHNSON | SAN FRANCISCO BUSINESS TIMES

Stephen Quake is a co-founder of Tachyon Therapeutics with Michael Clarke.

Wrapped inside Celgene Corp.'s deal for Quanticel Pharmaceuticals Inc. more than a decade ago was a preclinical compound Quanticel leaders believed could temper cancer's ability to resist treatment.

Now Quanticel founders Stephen Quake and Michael Clarke are back with their latest company, Tachyon Therapeutics Inc., and the compound sold off as part of the Celgene deal eight years ago. Tachyon recently started an early-stage clinical trial of the oral drug in people with advanced or metastatic solid tumors whose cancers have progressed or aren't responsive or are intolerant to current therapies.

Tachyon, based in San Francisco, recently secured $11.6 million that included new investors Veblen Ventures, Khosla Ventures and Red Tree Venture Capital. Another $7.1 million from the California Institute for Regenerative Medicine, or CIRM – the state's stem cell research funding agency – is paying for the Phase I trial.

TACH-101 targets KDM4 histone demethylase, an enzyme that epigenetically regulates the transcription of genes. KDM4 histone demethylase, in fact, is involved in many signaling pathways that are over-expressed in some of the most aggressive cancers, which makes it easy for tumors to form and then to resist treatment.

Epigenetic mutations are inherited changes in a cell that result from altered gene expression but without involving changes to DNA sequences.

"Cancer has the ability to overcome certain therapies," said Tachyon CEO Frank Perabo. "Many of these resistance mechanisms are regulated through epigenetic processes. It's a high-level target, almost omnipotent."

A drug that interferes with pathways responsible for resistance – like TACH-101, Tachyon leaders believe – then could be key to beating back an array of cancers. It could inhibit the proliferation of cancer stem cells, which multiply indefinitely and are resistant to chemotherapy.

"That's the beauty of epigenetic drugs. It inhibits a lot of crucial pathways," Perabo said. "If this drug shows what we think, it could be pretty spectacular."

But even with Quanticel and Celgene doing mostly early preclinical research to characterize TACH-101's mode of action and how it might work in the body, the drug really hadn't made major steps toward human testing. So when Celgene was bought for $13.4 billion in 2019 by Bristol-Myers Squibb Co. (NYSE: BMY), Tachyon leaders made a play to bring the compound back under their startup's control.

Clarke has worked in cancer stem cells his entire career. That led him to co-found the former Onyx Pharmaceuticals as well as Quanticel.

Clarke's partner at Quanticel was Quake, whose startups have included research tools company Fluidigm (now Standard BioTools), Verinata Health, liquid biopsy company ClearNote Health, pathogen testing company Karius Inc., pregnancy testing company Mirvie and more.

Tachyon undertook substantial studies that led to an investigation new drug application, or IND, to the Food and Drug Administration that is the first in the common three-stage process of clinical trials. Tachyon also looked at ways to optimize making the drug substance synthetically, its formulation and manufacturing processes.

The drug ingredient now is made by a contract manufacturer near Chicago while the capsule is made in San Diego, important moves during the Covid-19 pandemic as Tachyon took shape. Other companies had moved to have their clinical ingredients made in China, which created access issues during lockdowns there as well as supply-chain problems.

Tachyon itself will grow from its current five-person workforce, Perabo said, to about 15 over the next two years as it builds out its clinical operations team.

COURTESY OF TACHYON THERAPEUTICS

Frank Perabo, CEO, Tachyon Therapeutics

Tachyon's Phase I trial will enroll a minimum of 18 people and is open to people with multiple types of cancers, including lung and breast cancers, Perabo said. It could enroll as many as 70 patients before the study concludes in mid-2025.

"We want to explore this broadly," he said.