



\$11.4 million NIH grant advances drug to treat nicotine addiction

Funding awarded to scientists at Sanford Burnham Prebys, Camino Pharma and UC San Diego propels drug candidate through first-in-human studies

LA JOLLA, CALIF. – Sept. 16, 2020 – Scientists at [Sanford Burnham Prebys Medical Discovery Institute](#), [Camino Pharma, LLC](#) and [University of California San Diego School of Medicine](#) have been awarded an \$11.4 million grant from the National Institute on Drug Abuse (NIDA) at the National Institutes of Health (NIH) to advance a novel drug candidate for nicotine addiction into first-in-human Phase 1 studies. The drug targets a neuronal signaling pathway underlying addictive behaviors and would be a first-in-class medication to help people quit smoking.

“Smoking continues to be a major public health threat and there is a great need for new and effective smoking-cessation treatments. Existing FDA-approved therapies for nicotine addiction work less than 30% of the time in the long term, and it is common to relapse after quitting,” says principal investigator [Nicholas Cosford, Ph.D.](#), deputy director of Sanford Burnham Prebys’ National Cancer Institute (NCI)-designated Cancer Center and co-founder of Camino Pharma. “We are optimistic that our drug, SBP-9330, will help more people quit smoking for good—and we may be able to broaden the indication to other types of addiction, such as cocaine, opioid or methamphetamine dependency, as we move forward.”

More than [one billion people](#) worldwide smoke tobacco, and the advent of electronic cigarettes (e-cigarettes) has caused a sharp increase in young adults who use nicotine—the addictive component of tobacco. Cigarette smoking accounts for approximately 30% of all cancers, including 80% of lung cancer cases, according to the [American Cancer Society](#). Lung cancer remains the number-one cause of cancer deaths in the U.S., and more than half of people [die within a year](#) of being diagnosed.

“Incredibly, it has been 14 years since FDA approved the last drug treatment for nicotine addiction,” says principal investigator [Gonul Velicelebi, Ph.D.](#), CEO and co-founder of [Camino Pharma](#). “Our drug candidate works through a mechanism distinct from the currently available drugs and is an orally administered compound that may give people who want to quit smoking a safe, effective way to finally kick the habit.”

A new mechanism of action

The three-year grant will fund early clinical development of SBP-9330, a small molecule that was discovered by Cosford and his team at Sanford Burnham Prebys. SBP-9330 targets a receptor called metabotropic glutamate receptor 2 (mGlu₂), which leads to reduced levels of glutamate—a neurotransmitter linked to nicotine addiction and relapse behavior.

The NIH funding allows the scientists to initiate and complete a Phase 1 study of SBP-9330 in healthy volunteers. This study will determine the drug’s safety, tolerability and pharmacokinetic profile—which will

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inform dosing in subsequent studies. Additional studies, including longer-term toxicology, will also be conducted during the grant term to support future Phase 2a efficacy studies.

“This grant advances a potential therapeutic that, if successful, would help millions of people quit smoking and remain abstinent, thereby preventing or mitigating the negative health effects caused by smoking or vaping, including emphysema, cancer and even COVID-19,” says [Kristiina Vuori, M.D., Ph.D.](#), president of Sanford Burnham Prebys and Pauline & Stanley Foster Presidential Chair. “I applaud NIDA’s investment in this drug candidate which has the potential to have an enormous positive impact on human health.”

Earlier tests of SBP-9330, which were completed under a previous [\\$10.8 million NIDA grant](#) awarded to the same researchers, demonstrated that the drug candidate reduces nicotine self-administration in animal models and is safe and well tolerated in preclinical studies. Under the terms of the current grant, Sanford Burnham Prebys will complete activities related to drug manufacturing and formulation; Camino Pharma will drive clinical development of the drug candidate; and [Robert Anthenelli, M.D.](#), principal investigator and professor of Psychiatry at UC San Diego School of Medicine, will continue to provide expert guidance as a clinical pharmacologist and key opinion leader in the smoking-cessation field.

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About Sanford Burnham Prebys Medical Discovery Institute

Sanford Burnham Prebys is a preeminent, independent biomedical research institute dedicated to understanding human biology and disease and advancing scientific discoveries to profoundly impact human health. For more than 40 years, our research has produced breakthroughs in cancer, neuroscience, immunology and children’s diseases, and is anchored by our NCI-designated Cancer Center and advanced drug discovery capabilities. For more information, visit us at [SBPdiscovery.org](#) or on Facebook at [facebook.com/SBPdiscovery](#) and on Twitter [@SBPdiscovery](#).

About Camino Pharma, LLC

[Camino Pharma](#) is a San Diego–based start-up focused on discovering and developing safe and effective, first-in-class drugs to treat patients suffering from (1) psychiatric disorders that are poorly addressed by current medications, including substance abuse and major depression, and (2) the most aggressive forms of cancer with currently limited treatment options. We target signaling proteins based on emerging biological concepts and discover novel mechanisms for modulating these targets with small molecule drugs. Our leadership team has proven expertise in the relevant target biology as well as extensive experience in drug discovery and development. Our innovative technology platform allows for exploiting inadequately served targets that require a highly adaptive and specialized approach to drug discovery. We intend to find novel cures using our deep understanding in target biology combined with well-tailored, cutting-edge discovery technologies. Visit Camino Pharma at [www.caminopharma.com](#).

About UC San Diego School of Medicine

Established in 1968, University of California San Diego School of Medicine is consistently ranked among the top medical school programs in the country for primary care and research by *U.S. News & World* Camino Pharma, LLC.

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Report and among the top 10 medical schools for National Institutes of Health total funding. The school is internationally recognized as a place where discoveries are delivered — bringing breakthroughs from the research lab to patients' bedsides. Faculty members care for patients at UC San Diego Health, where primary care is available at several convenient locations throughout San Diego County and our advanced specialty care consistently ranks among the nation's best. The Department of Psychiatry ranks among the top five departments in the country in NIH funding. For more information, visit medschool.ucsd.edu.

Conflict-of-Interest statement

Dr. Cosford has an equity interest in Camino Pharma, LLC, a company that may potentially benefit from the research results. Dr. Cosford's relationship with Camino Pharma, LLC has been reviewed and approved by Sanford Burnham Prebys Medical Discovery Institute in accordance with its conflict-of-interest policies.