$9 million NIH grant advances drug to treat nicotine addiction

Funding awarded to scientists at Camino Pharma, Sanford Burnham Prebys, and UC San Diego will expand the nonclinical studies to support Phase 2 clinical evaluation

San Diego, CALIF., Feb. 6, 2024 - Scientists at Camino Pharma, LLC, Sanford Burnham Prebys and University of California San Diego School of Medicine received a $9-million grant (U01DA057847) from the National Institute on Drug Abuse (NIDA) at the National Institutes of Health (NIH). The 3-year grant will fund longer toxicology studies and drug manufacturing of SBP-9330 to support planned Phase 2 studies for nicotine cessation. SBP-9330, a small molecule that was discovered by Dr. Nicholas Cosford and his team at Sanford Burnham Prebys, targets a receptor called metabotropic glutamate receptor 2 ($mGlu_2$), leading to reduced levels of glutamate—a neurotransmitter linked to nicotine addiction and relapse behavior. SBP-9330 works through a mechanism distinct from the currently available drugs and would be a first-in-class medication to help people quit smoking.

The Phase 1 clinical testing of SBP-9330 was recently completed under a previous $11.4-million, 3-year NIDA grant awarded to the same researchers, documenting that the drug candidate is safe and well tolerated in healthy smoking and nonsmoking human subjects. Under the terms of the current grant, investigators at Camino Pharma will oversee the longer-term toxicology studies, Sanford Burnham Prebys will oversee drug manufacturing and formulation, and UC San Diego School of Medicine will provide guidance for the design of the Phase 2 clinical program.

“Our Phase 1 study results showed that SBP-9330 has a favorable safety and tolerability profile and well-behaved pharmacokinetics in humans, supporting further clinical development and evaluation of the compound in a proof-of-concept study in smokers as an aid to smoking cessation,” says co-principal investigator Gonul Velicelebi, Ph.D., CEO and co-founder of Camino Pharma. “We are grateful to NIDA for their sustained support of the SBP-9330 program from preclinical through the clinical stage, awarding three consecutive U01 grants, totaling $31.2 million and underscoring the vital importance of public funding for addiction treatments.”

“SBP-9330 is a positive allosteric modulator (PAM) of mGlu2 and thus represents a new class of drugs for treating substance use disorders. We are optimistic we can expand the indications to other types of addiction beyond nicotine, as supported by our preclinical data in animal models,” states Nicholas Cosford, Ph.D., principal investigator on the grant, professor at Sanford Burnham Prebys and co-founder of Camino Pharma.

“I’m delighted to continue as one of the co-PIs on this project that is part of NIDA’s “Grand Opportunities in Medications Development for Substance-Use Disorders” portfolio. The opportunity to work with a novel drug like SBP-9330 from bench to bedside is exciting. We desperately need additional smoking cessation medications,” says Robert Anthenelli, M.D., co-principal investigator, professor of psychiatry at UC San Diego School of Medicine and a key opinion leader in the smoking-cessation field.

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.

About Camino Pharma, LLC (www.caminopharma.com)
Camino Pharma is a San Diego–based start-up focused on discovering and developing first-in-class therapies for patients afflicted with cancer and CNS disorders. 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 goal is to discover and develop novel, first-in-class to treat (1) the most aggressive forms of cancer with currently limited treatment options, and (2) psychiatric disorders that are poorly addressed by current medications, including substance use and major depression. Our innovative technology platform allows for exploiting inadequately served targets that require a highly adaptive and specialized approach to drug discovery. We intend to use our deep understanding in target biology, combined with extremely tailored, cutting-edge discovery technologies, to find novel cures.

About Sanford Burnham Prebys (www.sbpdiscovery.org)
Sanford Burnham Prebys is an independent biomedical research institute dedicated to understanding basic human biology and disease and advancing scientific discoveries to profoundly impact human health. Our track record of pioneering research spans more than 47 years and has produced breakthroughs in cancer, neuroscience, immunology and children's diseases and is anchored by our NCI-designated cancer center. Sanford Burnham Prebys' drug discovery center and global partnerships propel our prototype drugs and therapeutic strategies toward improving human health. A deep culture of collaboration and commitment to educate the next generation of scientists unites Sanford Burnham Prebys researchers, partners and philanthropists in a shared mission to improve human health.

About UC San Diego School of Medicine (www.medschool.ucsd.edu)
Established in 1968, University of California San Diego School of Medicine is dedicated to serving its communities and creating a healthier world by becoming the preeminent destination for transformative, innovative and impactful research, medical education and clinical care. As the only medical school in the region, UC San Diego School of Medicine is home to nearly 1,800 faculty, 900 medical and graduate students and 1000+ residents and fellows across 20 academic departments. The medical school is consistently ranked among the top medical programs across the country in research and primary care according to U.S. News and World Report. UC San Diego School of Medicine is housed within UC San Diego Health Sciences, which is comprised of three health professional schools, more than 30 research institutes and a growing clinical practice at UC San Diego Health, the top ranked health system in the region.

Conflict-of-Interest statement
The development of SBP-9330 was supported by grants from NIH (Awards U01DA051077, U01DA041731 and U01DA057847). 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.

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