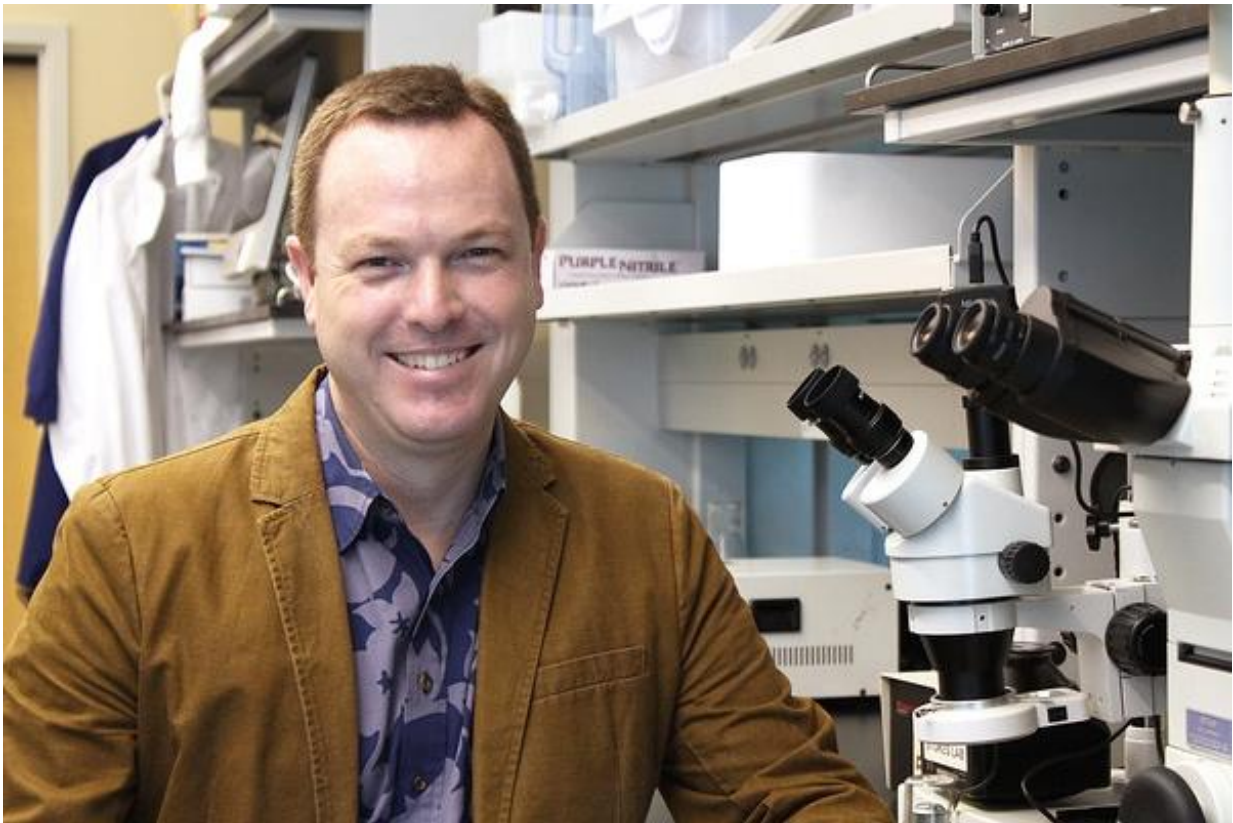


Marijuana compounds show promise in treatment of cardiac disease

January 16 2017, by Alexander Stokes, PhD



Dr. Alexander Stokes in his JABSOM laboratory. Credit: University of Hawaii at Manoa

A Nevada company is hoping to develop new medicines for heart failure using compounds in marijuana and a novel therapy identified by a

University of Hawai'i at Mānoa researcher.

Dr. Alexander Stokes, assistant research professor in the Department of Cell and Molecular Biology at the UH John A. Burns School of Medicine, obtained a U.S. patent for his [novel therapy](#) in 2015. The patent claims the cannabinoid receptor TRPV1 can be regulated therapeutically by plant-based cannabinoids.

Cannabinoids include psychoactive and non-psychoactive compounds derived from marijuana, both of which have medicinal properties. They exert their effects inside cells after binding to receptor proteins in the cell membranes, such as TRPV1 and the classical cannabinoid receptors, CB1 and CB2.

Pharmaceutical development company GrowBlox Life Sciences LLC, a wholly owned subsidiary of GB Sciences Inc., obtained the license for Stokes' intellectual therapy last December from Makai Biotechnology LLC, a Hawai'i-based cardiovascular therapy company founded by Stokes.

"Cardiovascular disease is the leading global cause of death, accounting for more than 17.3 million deaths per year, a number that is expected to grow to more than 23.6 million by 2030," said Dr. Stokes. In the U.S, he explained, this equates to one in three deaths, about one every 40 seconds, and costs the country approximately \$316.6 billion a year.

Patients urgently need new drugs that can prevent or reverse the stages of cardiac disease and [heart failure](#), according to Dr. Stokes. He further explained that TRPV1 is clearly a major cellular receptor involved in the progression to heart failure, and there is great potential for the new, proprietary mixtures within the GB Life Sciences portfolio to regulate the TRPV1 cannabinoid receptor.

GB Sciences said licensing the TRPV1 patent is a major step in its commitment to discovering new drugs that interact with the non-classical cannabinoid receptors, in addition to binding to the better characterized CB1 and CB2 cannabinoid receptors.

"Our vision of novel, patentable cannabis-based formulations in the treatment of major diseases is now married with a proven drug target for modulation of adverse outcomes in cardiovascular disease," said Dr. Andrea Small-Howard, Chief Science Officer of GB Sciences.

Cannabinoids in native plant extracts exerted a more significant effect on TRPV1 receptors than purified cannabinoids in published research reports.

"GB Sciences believes its cannabis-plant-based approach may provide additional clinical benefits to patients due to the 'entourage effect.' In addition, the side effect profiles of cannabis-based therapies have generally been well tolerated," said Dr. Small-Howard. The "entourage effect" refers to the theory that some cannabis compounds have greater effects on the human body when combined with other compounds than when given alone.

Said GB Sciences CEO John Poss, "This license is an important step in our company's march to successful drug discovery. We are very proud of Dr. Small-Howard and her team, and we expect results from this effort that will enable the company to do well by doing good for literally millions of cardiac patients around the world."

Provided by University of Hawaii at Manoa

Citation: Marijuana compounds show promise in treatment of cardiac disease (2017, January 16) retrieved 28 April 2024 from

<https://medicalxpress.com/news/2017-01-marijuana-compounds-treatment-cardiac-disease.html>

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