

# Scientists help explain effects of ancient Chinese herbal formulas on heart health

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Shedding new light on ancient Chinese herbal formulas for cardiovascular indications from left to right are: Yong-Jian Geng, M.D., Ph.D.; Yaoping Tang, M.D., Nathan S. Bryan, Ph.D.; and Harsha Garg. Credit: The University of Texas Health Science Center at Houston

New research at The University of Texas Health Science Center at Houston suggests that ancient Chinese herbal formulas used primarily for cardiovascular indications including heart disease may produce large amounts of artery-widening nitric oxide. Findings of the preclinical study by scientists in the university's Brown Foundation Institute of Molecular Medicine for the Prevention of Human Diseases (IMM) appear in the Sept. 15 print issue of the journal *Free Radical Biology & Medicine*.

Nitric oxide is crucial to the cardiovascular system because it signals the inner walls of blood vessels to relax, which facilitates the flow of blood through the heart and circulatory system. The messenger molecule also eliminates dangerous clots, lowers high blood pressure and reduces artery-clogging plaque formation.

The results from this study reveal that ancient Chinese herbal formulas "have profound nitric oxide bioactivity primarily through the enhancement of nitric oxide in the inner walls of blood vessels, but also through their ability to convert nitrite and nitrate into nitric oxide," said Nathan S. Bryan, Ph.D., the study's senior author and an IMM assistant professor.

Herbal formulas are a major component of traditional Chinese medicines (TCMs), which also include acupuncture and massage. "TCMs have provided leads to safe medications in cancer, cardiovascular disease and diabetes," said C. Thomas Caskey, M.D., IMM director and CEO. "The opportunity for Dr. Bryan's work is outstanding given that cardiac disease is the No. 1 cause of death in the United States."

In the study, researchers performed laboratory tests on DanShen, GuaLou and other herbs purchased at a Houston store to assess their ability to produce [nitric oxide](#). Ancient Chinese herbal formulas used primarily for cardiovascular indications are made up of three to 25 herbs. The formulas can be administered as tablets, elixirs, soups and teas.

Most Chinese herbal formulas marketed in the United States are not considered drugs by the U.S. Food and Drug Administration, said Yong-Jian Geng, M.D., Ph.D., study co-author and cardiology professor at The University of Texas Medical School at Houston. They are considered dietary supplements and are not regulated as strictly as drugs.

Scientists also tested the capacity of the store-bought TCMs to widen [blood vessels](#) in an animal model. "Each of the TCMs tested in the assays relaxed vessels to various degrees," the authors stated.

"Further studies should be considered in humans, particularly those with cardiac indications," Geng said. "Hopefully, we will have more data to report in the near future."

While fully integrated into the healthcare systems in some parts of Asia, ancient Chinese herbal formulas are often considered alternative medicines in Western nations. Part of the reason, according to Bryan, may be that until recently little was known about how they work.

"The next step is to identify the active components of the TCMs that are responsible for producing the NO. We are currently trying to isolate and identify the active component or components," Bryan said.

Source: University of Texas Health Science Center at Houston ([news : web](#))

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