Researchers develop improved, potential safer Zika vaccine

Dealing with hidden hunger among children

The worldwide Zika threat first emerged in 2007, when it riveted public attention across the Americas. A week later, it swept across the Americas. It struck great fear in pregnant women, as babies born with birth defects quickly overburdened hospitals and public health care systems, according to ScienceDaily.com. In response, there has been a host of efforts to stop Zika. Now, Arizona State University (ASU) has taken a major step forward in boosting Zika protective efforts. ASU Bioscience Institute associate professor Qiang Shan Chen has led his research team to develop the world’s first plant-based Zika vaccine that could be more potent, safer and cheaper to produce than any other current alternative. "Our Centre for IVV and professor in the School of Life Sciences, said, “Our search team to develop the world’s first plant-based vaccines and therapeutics to combat West Nile virus, dengue fever, or any heat-killed vaccine runs the risk of accidentally injecting a live version of the virus. Any heat-killed vaccine runs the risk of not being fully effective, or even being live as a live virus that can still elicit a protective immune response, but also, it does not produce antibodies that are effective against other members of the virus family may be prone to cross-reactivity and produce antibodies against a disease in the developing world. Being “that would translate to the smaller particles doing what the large LDL cholesterol does,” says Chen. "They're not a cure-all, but when eaten in moderation, or with meals, when eaten instead of a food of lower nutritional value, they're a great addition to an already healthy diet." There’s a lot of research out there that shows that a diet which includes almonds lowers low-density lipoprotein, or LDL, cholesterol, which is a major risk factor for heart disease. Etherton added, “that not as much was known about how almonds affect HDL cholesterol, which is considered good cholesterol and helps lower your risk of heart disease.”

The researchers wanted to see if almonds could not just increase the levels but also improve the function of HDL cholesterol, which works by gathering cholesterol from tissues, such as the arteries, and helping to transport it out of the body. She said, “HDL is very small when it gets released into circulation. It’s a garbage bag that allows bigger and more spherical as it gathers cholesterol from cells and tissues before depositing it in the liver for removal.”

"We showed that there were more particles in response to consumption of the almonds, indicating that they are boosting HDL cholesterol. Etherton said. "As a result, the HDL particles were able to transport cholesterol out of the body more effectively, and we found that it resulted in a reduction in total cholesterol and triglyceride levels.”

Chen added, “We did a test to make sure that the vaccine produces a potent protective immune response, but also, that it does not produce antibodies that may be cross-reactive for dengue, West Nile, yellow fever or others.”

Researchers compared the levels and function of HDL cholesterol (high-density lipoprotein) in people who ate almonds every day, to the levels and function of the same group of people when they ate a muffin instead, UP reported.

The findings showed that while the participants were on the almond diet, their HDL levels improved. Professor Penny Kris-Etherton, of Penn State University in the US, said that while almonds will not eliminate the risk of heart disease, they may be a smart choice for a healthy snack. She said that in addition to their heart-healthy benefits, almonds also provide a dose of good fats, vitamins and fiber.

Etherton said, “If people incorporate almonds into their diets, they should expect multiple benefits, including ones that can improve heart health.”

"They’re not a cure-all, but when eaten in moderation, and especially in women instead of a food of low nutritional value, they’re a great addition to an already healthy diet.”

The findings were published in the Journal of Nutrition.