Researchers seek to stimulate skin regeneration in third-degree burns

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Researchers from the School of Chemistry of the National University of Mexico (UNAM) have developed a polymer derived from gallic acid—a low-cost organic compound found in tea leaves, oak bark, apples and blueberries with potential applications for the food and medical industries

Dr. Miquel Gimeno Seco, head of research, said that the new molecule, polyacid gallic, has great antioxidant and antimicrobial applications in the food and biomedical industries; for example, tests are underway in collaboration with the National Institute for Rehabilitation (INR) on films with cellulose to stimulate regeneration of skin in patients with third-degree burns by using the polymer against bacteria generated in ulcers.

At a press conference, the academic said that another application is in electronics as an organic semiconductor. "Unlike inorganic semiconductors, this is a natural compound, friendly to the environment, nontoxic and also flexible and formable, so we expect to use it in soft generating devices, for example, televisions".

Gimeno Seco, researcher at the Department of Food and Biotechnology, added that one of the challenges is to ensure that natural materials are efficient and cheap as inorganic catalysts.

The method of design and creation of the polymer started in 2010 from a multidisciplinary research, which consisted of "extracting the gallic

acid naturally. In the laboratory, we process its Ph and in a clean environment, we add the enzyme."

Gallic acid synthesis was part of the Programme for the Promotion of Patenting and Innovation (PROFOPI) in Mexico. A patent is pending for later commercialization and application.

"Innovations born at the faculty of chemistry open the door to industrial development for the benefit of Mexicans," says Dr. Jorge Vazquez Ramos, director of the School of Chemistry.

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