Microorganism and method to produce urolithins

Professor Francisco Tomas group at CEBAS-CSIC has isolated and characterized the first urolithin-producing microorganism from ellagic acid and ellagitannins present in the diet. A urolithin producing method based on the use of the mentioned microorganism has been developed and both, the microorganism and the method are part of a Spanish priority patent application assigned to CSIC. Biotech companies, functional food or nutraceutical companies are sought for license and/or development agreements.

An offer for Patent Licensing

Antioxidant activity

Urolithins are antioxidant compounds that could act as estrogenic modulators, have anti-inflammatory and anticancer activities, prebiotic effects and prevention of cardiovascular diseases.

The microbes present in the intestine through dietary ellagic acid and ellagitannins metabolism produce these compounds. The urolithins produced, once absorbed, join the blood current and could exert their protecting effect in the corresponding organ/tissue.

The invention provides a microorganism capable to produce urolithins from dietary ellagic acid and ellagitannins. Besides, a method for industrial production of urolithins to be used in food compositions, drinks, dietary complements, pharmaceutical compositions and/or functional foods enriched in urolithins produced in a similar form as in the intestine (bacterial metabolism from dietary polyphenols) has been developed.

Main applications and advantages

- The first described and characterized microorganism able to produce urolithins
- Method for industrial production of urolithins for various uses as pharmaceutical, food, drink, etc.
- Urolithins producing microorganism identification system

Patent Status

Priority establish by a Spanish patent application

For further information please contact

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The Spanish National Research Council (Consejo Superior de Investigaciones Científicas, CSIC) is the largest public research organisation in Spain. CSIC is a multidisciplinary organisation with 130 centres located nationwide and a workforce of 13000. CSIC files an average of 60 international (PCT) and 180 Spanish patent applications and signs more than 60 technology licenses each year.

The Deputy Vice-Presidency for Knowledge Transfer is CSIC’s gateway for companies, ranging from SMEs to multinationals. We facilitate the appropriate contacts and are responsible for the cooperation with the industry, through research contracts and license agreements.

Some examples of our commitment to collaborate with companies in the field of Life Sciences are:

- Researchers at CSIC developed a method for DNA amplification based on a polymerase of the bacteriophage Phi29. This enzyme is particularly suitable for whole genome amplification from minute amounts of biological samples. Besides, the method works at mild temperature with no need of heating / cooling cycles. Different kits are marketed by GE Healthcare and QIAGEN under a patent license agreement with CSIC and are widely used for genetic analyses in research, testing and forensics.

- Gluten is a protein mixture present in several cereals which is toxic to celiacs. Nowadays gluten can be found in many processed foods and therefore a reliable test to measure its content is an absolute requirement for celiacs to ensure a long-life gluten-free diet. CSIC has developed an immunological test that is being assessed by the FAO and the WHO for replacement of its current Codex Alimentarius standard, thus paving its way to become the worldwide official technique to certify gluten-free food products. CSIC’s technique is already endorsed by many associations of celiacs and thus four European companies successfully market kits for gluten measurement under a license agreement with CSIC.

- CSIC collaborated with Innogenetics N.V. (Belgium) and several research institutions and universities from Spain, Italy and the UK to develop an ELISA method to detect the Maedi-Visna virus. The patented method is licensed to the French company Hyphen and thus farmers have now a reliable tool to detect this virus, which may cause chronic pneumonia, mastitis, encephalitis and arthritis in sheep.

In summary, whether you are looking for technology licenses, collaborative research and development, research under contract, technological services, or any other form of interaction with a key player in research and innovation in Cancer, Infectious and Cardiovascular diseases, Physiopathology, Immunology, Neurobiology, Genomics and Proteomics, Diagnosis techniques, Molecular and Structural biology, Veterinary biosciences, Industrial biotechnology and bio-processing, Biopharmaceutical development, Bioremediation, Bioinformatics, Biophysics, Plant biotechnology, Agricultural science, Food science and technology and other Life Sciences areas, we will be glad of hearing from you.