Inductor biológico de la actividad de lacasa

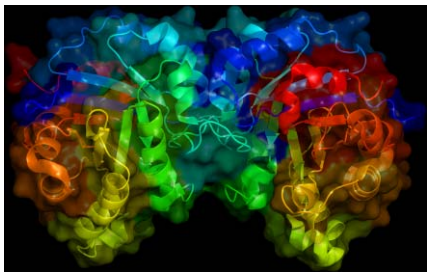
El CSIC ha descubierto una nueva forma de incrementar la producción de la enzima lacasa en un hongo del género Coriolopsis mediante un inductor biológico.
Los ensayos llevados a cabo, muestran que al añadir a un cultivo de coriolopsis un hongo del género Penicillium, se incrementa hasta 3.000 veces la actividad enzimática de lacasa producida por el hongo Coriolopsis, comparada con la actividad de lacasa obtenida en el cultivo basal.

An offer for Patent Licensing

Abaratamiento en la producción de lacasa

Las lacasas son enzimas que se encuentran en muchas plantas, hongos y microorganismos, de tipo fenolxidasas que catalizan la oxidación de compuestos aromáticos y ligninas. Debido a esta capacidad de oxidación se emplean en industrias como la cosmética, alimentaria, textil, nanotecnología, en la degradación de hidrocarburos policíclicos aromáticos o en biorremediación de residuos agroindustriales.

Estas enzimas presentan una baja especificidad de sustrato y para su uso a nivel industrial se necesita una alta actividad enzimática. Para aumentar la actividad enzimática tradicionalmente se han empleado inductores químicos como por ejemplo el cobre, o inductores fenólicos incrementando el coste de producción y presentando problemas de toxicidad.



Un hongo incrementa la producción de enzima lacasa.

Incremento de hasta 3.000 veces la actividad de lacasa

Una organización de investigación española ha demostrado que el co-cultivo de hongos del género Coriolopsis junto con hongos del género Penicillium en condiciones estáticas, a una temperatura de 28 °C aumenta la actividad de lacasa producida por el hongo Coriolopsis, obteniéndose incrementos de 3.000 veces sobre el cultivo basal de Coriolopsis, de 150 veces sobre el obtenido con inductores fenólicos y 2 veces el obtenido usando cobre como inductor.

Principales aplicaciones y ventajas

Es un método simple y eficaz de aumentar la actividad de lacasa

Disminuye los costes de producción del enzima lacasa

El producto final que se obtiene no es tóxico ya que no emplea inductores químicos

La enzima lacasa obtenida mediante este método puede purificarse de forma simple con cualquiera de los métodos conocidos en el estado de la técnica.

Patent Status

Spanish patent application

For further information please contact

Iratxe Cano, Ph.D.
Material Sciences Area
Deputy Vice-Presidency for Knowledge Transfer
Spanish National Research Council (CSIC)
Tel.: + 34 – 958181600 ext 177
Fax: + 34 – 958129600
E-mail: iratxe.cano@eez.csic.es

Vicepresidencia Adjunta de Transferencia de Conocimiento

Deputy Vice-Presidency for Knowledge Transfer

Main office: Serrano, 142. 28006 – Madrid. Spain

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 producers. 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.