

Pucci-Tase

New deacetylase for the industrial production of high-quality chitosan

Invention

Chitosan has a broad spectrum of industrial applications ranging from contact lenses and matrices for tissue engineering to immobilisation membranes for enzymes and cells in biotechnological processes, feed additives and many others.

Production of high-quality chitosan from chitin requires a process that yields a product with defined degree of polymerisation and deacetylation. Chemical processes lead to such high-quality chitosan only after lengthy purification processes, which entail significant loss of product.

A biological process can be much more specific. The invention discloses a gene encoding for a protein, which offers a new kind of deacetylase activity. This new chitin-deacetylase from *Puccinia graminis* can be applied to oligo and polymers of N-acetylglucosamin (GlcNAc).

Activity can be influenced by choice of reaction parameters such as pH over a broad range, temperatures between 5° and 60°C as well as others. The reaction conditions may also be designed to reverse the process, i.e. resulting in acetylation of chitosan.

The invention further provides the production and purification processes for the enzyme, e.g. expression and secretion of the protein in *Schizosaccharomyces pombe*.

Commercial Opportunities

We offer the production process for the enzyme as well as a production process of chitosan for licensing, and we are interested in establishing partnerships for further development and commercialisation of this technology.

Current Status

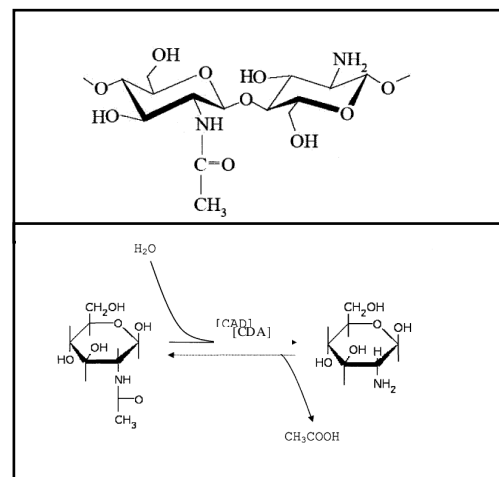
On behalf of the University of Muenster, PROVendis offers access to rights for commercial use as well as the opportunity for further co-development.

An international patent application has been filed (PCT).

Developed by the Westfälische-Wilhelms-University of Muenster.

PROVendis GmbH is the patent licensing agency for the universities of North Rhine-Westphalia Germany

PROVendis GmbH • Eppinghofer Straße 50 • D-45468 Muelheim/ Ruhr



Part of the copolymer – typical link between GlcNAc and glucosamine **Enzymatic deacetylation**

Benefits

- Enzymatic production process of chitosan yielding defined product quality
- Industrial applicability of reaction conditions
- Commercially attractive production process for the enzyme

Contact

Ref. No.: 1436

Dr. Silvia Schön-Feltes

Phone: +49 (0)208 94 105 46

Fax: +49 (0)208 94 105 50

Email: sf@provendis.info

Web: www.provendis.info

www.lifesciencepatente-nrw.de