Glutamate 2,3-Aminomutases for Industrial Production of 3-Hydroxyproprionate

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing the gene that encodes the enzyme glutamate 2,3-aminomutase.

OVERVIEW

Beta amino acids, which are naturally produced from alpha amino acids, are crucial components of many pharmacologically active compounds. They are also useful precursors for preparing various industrial chemicals, including 3-hydroxyproprionate (3HP), a key intermediate in the synthesis of biodegradable plastics from biomass. Although UW-Madison researchers previously discovered an enzyme, lysine 2,3-aminomutase, which catalyzes the conversion of lysine and other alpha amino acids to their corresponding beta amino acid, no enzyme that specifically possesses glutamate 2,3-aminomutase activity has been reported.

THE INVENTION

The UW-Madison reseachers have now identified, isolated and characterized the gene that encodes the enzyme glutamate 2,3-aminomutase. Glutamate 2,3-aminomutase catalyzes the conversion of alpha glutamic acid to beta glutamic acid. This gene was isolated from the bacterium *Clostridium difficile*.

APPLICATIONS

- Production of 3HP

KEY BENEFITS

- Enables the production of beta glutamate from recombinant host cells
- May be used to develop a simplified and inexpensive procedure for the large scale, *in vitro* synthesis of 3HP
- Useful to identify other glutamate 2,3-aminomutases

THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.

ADDITIONAL INFORMATION

Tech Fields

Clean Technology - Energy & resource efficiencies

CONTACT INFORMATION

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854.