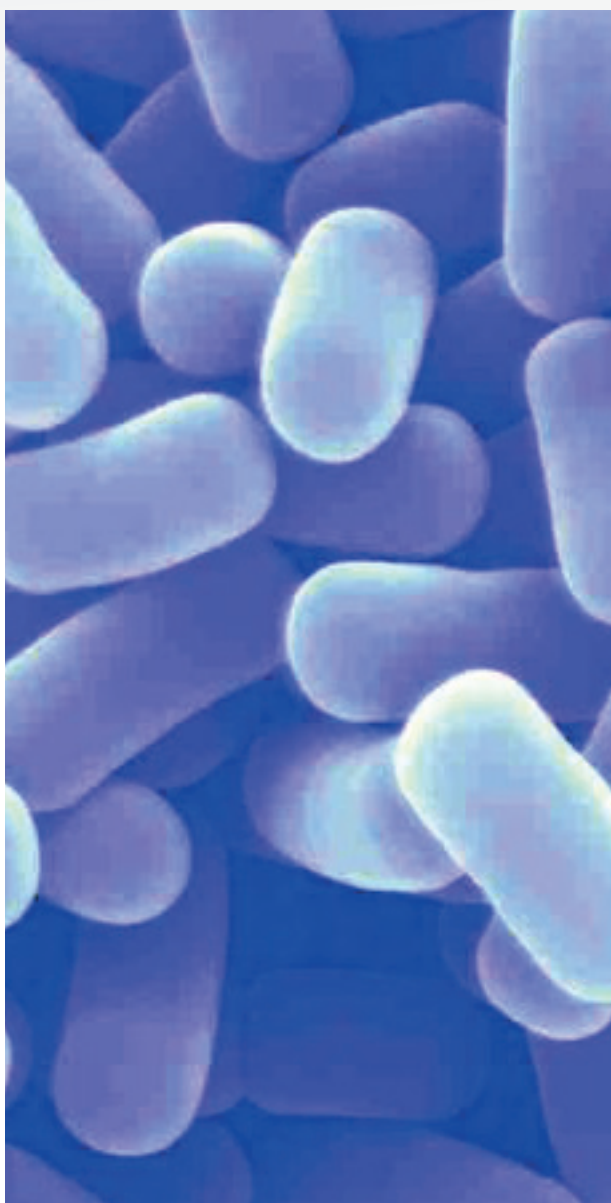




## AN INDUSTRIALLY POTENT *LACTOBACILLUS PLANTARUM* FOR DUAL BIOSYNTHESIZING ACTIVITIES FOR THE PRODUCTION OF GLUTAMIC ACID AND GABA



### TECHNOLOGY DESCRIPTION

This process is used for dual production of glutamic acid and  $\gamma$ -aminobutyric acid (GABA) with *Lactobacillus plantarum* specifically isolated for high yield production.

### TECHNOLOGY FEATURES

Using glutamic acid producing lactic acid bacteria in food industries produces food rich in GABA. GABA producing potency magnifies the usefulness of the presence strain in functional food industry. This can produce a biologically active form of glutamic acid as compared to chemical synthesis, thus making it suitable for the development of health oriented food. It can be facilitated for large-scale production of GABA containing foods in an eco-friendly process. The food derived from the technology contains anti-hypertensive activity.

### ADVANTAGES

- Promotes health benefits to consumers
- Safe – naturally occurring and biologically active form of glutamic acid
- Eco-friendly process
- Simple and adoptable to home-made or commercial purposes

### INDUSTRY OVERVIEW

#### Prospects: Food manufacturers, Health-conscious

With increasing demand of global market for functional food and beverages, this category now accounts about 5% of the overall food market and is driving growth for the food industry as a whole. The global functional food market revenue for the year 2013 was approximately USD175 billion with an annual average growth rate of 15%. Dairy products account the largest share of functional foods, followed by bakery/ cereals, beverages, and fats and oils. In terms of demand by region, Japan consistently leads demand to reach USD11.3 billion in 2014, followed by the United States (USD9.1 billion), Europe (USD8.9 billion) and Australia (USD530 million). Due to lack of information available for functional foods in Malaysia, it can be assumed that Malaysia has an attractive functional food and beverage niche from its large food and beverage market, which is now valued at more than RM 30 billion. Malaysia-based food manufacturing companies that are involved the production of functional food products include Nestlé Malaysia, F&N (Fraser & Neave) and Kraft.

**Prof. Dr. Nazamid Saari**  
Faculty of Food Science and Technology  
nazamid@upm.edu.my