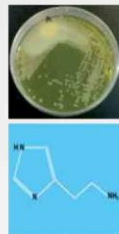
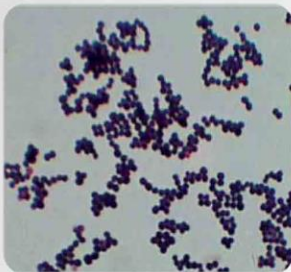


Halotolerant *Staphylococcus carnosus* FS19 as a Potential Histamine Degradator



Staphylococcus carnosus FS19

INTRODUCTION

- Fermented fish products such as fish sauce and shrimp sauce often contain high levels of biogenic amines, especially histamine.
- Histamine in foods can cause adverse health effects such as migraine, rash, localized inflammation and hypertension to sensitive consumers.
- Effective, safe and low cost method to reduce histamine level in fermented fish products is required to ensure the safety of the products.
- This invention is highly potential to solve all the aforementioned matters.

INVENTION

- Potential halotolerant starter culture for effective histamine degradation during manufacturing of fermented fish products.
- The culture utilizes its amine oxidase enzyme to degrade histamine during its application.
- Being halotolerant, *Staphylococcus carnosus* FS19 degradation activities occurred at broad range of conditions suitable for fish fermentation (Figure 1).
- *Staphylococcus carnosus* FS19 reduced 27.7% of histamine concentration during fish sauce fermentation (Figure 2) at 35 °C for 120 days.

POTENTIAL CONSUMER

- Potential manufacturers of fish sauce and other fermented fish products.
- Global research agencies.
- Food Industries and Allied Agencies such as Fisheries Agency (LKIM), Ministry of Agriculture (Dept. of Fisheries) and Ministry of Health.

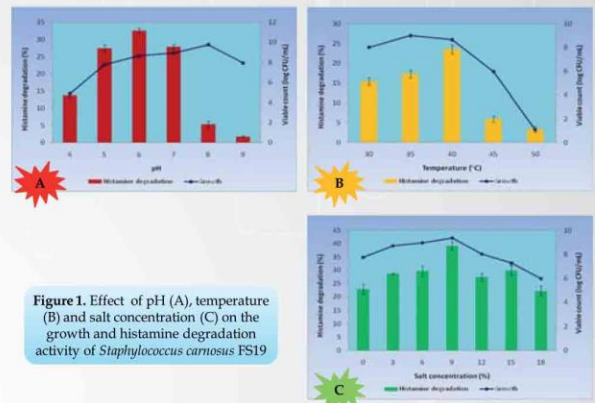


Figure 1. Effect of pH (A), temperature (B) and salt concentration (C) on the growth and histamine degradation activity of *Staphylococcus carnosus* FS19

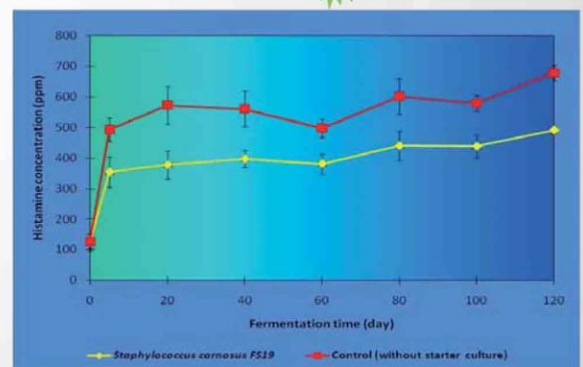


Figure 2. Histamine concentration during fermentation of fish sauce (35 °C, 120 days) with *Staphylococcus carnosus* FS19

COST COMPARED TO BENEFIT

- Other efforts in reducing histamine in foods are often being associated with food processing methods which usually affect the end product quality and may cause high additional production cost.
- The use of this starter is easy and requires less cost, but resulted in quite effective histamine reduction without compromising the product quality.
- Safe for consumption by all consumers.
- The culture has halotolerant trait and therefore is suitable to be used in other fermented fish products.



Project Leader : Prof. Dr. Fatimah Abu Bakar
 Co. Researchers : Dr. Muhammad Zukhrufuz Zaman, Prof. Dr. Jinap Selamat and Prof. Dr. Jamilah Bakar
 Department / Lab : Food Science / Food Safety and Quality
 Faculty : Food Science and Technology
 Email : fatim@putra.upm.edu.my
 Tel : +603 8946 8368

Project Leader Expertise : Food Microbiology / Safety, Seafood Quality and Biosensor Technology