Analysis of soy sauce, rich in nutrients like amino acids

Introduction

Soy sauce is an essential condiment in people's lives. It has been favored by people since it is produced, and it contains rich nutrients. Researches have shown that, soy sauce contains sugars, proteins, amino acids, fats, enzymes, vitamins, niacin, sulfates, phosphates, calcium and many other essential nutrients for the human body.

Among them, amino acids are the most important nutrients. 50%-75% nitrogen content of the soy sauce is in amino acids, and the amino acids mostly exist in free form. The FAO/WHO standard stipulates that the ratio of essential amino acids to total amino acids and the ratio of essential amino acids to non-essential amino acids are 40% and 60%, respectively. The closer the ratio of the two in the food is to this value, the higher the nutritional value of the food is.

Analysis of essential amino acids in soy sauce:
There are eight kinds of amino acids that constitute the body's protein, and soy sauce contains them all. Therefore soy sauce is an important source of essential amino acids for the body. Comparing contents of those essential amino acids in our daily consumption of soy sauce with the percentage specified by the FAO/WHO standard model spectrum, We can determine whether we need to consume foods containing certain amino acids.

Analysis of γ-aminobutyric acid in soy sauce:
γ-aminobutyric acid is a natural functional amino acid and an important inhibitory neurotransmitter that has been studied in depth. It participates in a variety of metabolic activities and has high physiological activity. It has the effect of calming nerves, anti-anxiety, and lowering blood pressure. Researches in Japan show that it has a significant improvement effect on Kupperman syndrome. Studies in China and Japan have shown that γ-aminobutyric acid can also lower blood ammonia, relieve ammonia toxicity, and promote the recovery of brain cells. In addition, γ-aminobutyric acid can prevent arteriosclerosis, regulate arrhythmia, and prevent skin aging.

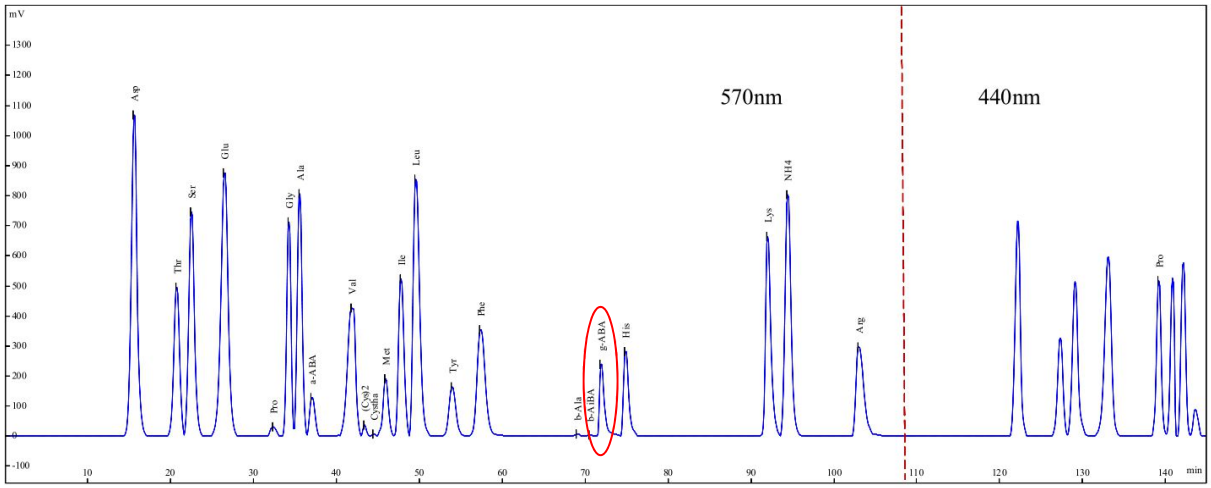

Figure 1: The sample was diluted in sample dilution buffer and subjected to protein precipitation by adding precipitation solution. After the sample was filtered and centrifuged, the free amino acids were separated using a lithium cation exchange column and then derivatized with ninhydrin. The detection was performed at 440 nm and 570 nm. The concentrations of the individual amino acids were determined using a known concentration of a standard amino acid mixture.

membraPure GmbH

Wolfgang-Küntscher-Str. 14
D - 16761 Hennigsdorf
Germany