

Analysis of Sake Taste Using Multielectrode Taste Sensor

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The taste of sake was studied using a multielectrode taste sensor with lipid membranes as a transducer of taste substances. Different brands of sake were easily distinguished from the output electric potential patterns. These patterns showed good membrane stability over time even with high alcohol concentrations of sake. Upon comparison between the sensor response and the values obtained by chemical analysis, the sensor response showed a high correlation to the values of titrable acidity which is important in sake making. This high correlation resulted from the fact that the values of both sensor response and titrable acidity reflect pH and the amino acid concentration in sake.

1. Introduction

The quality of sake is evaluated by factors such as taste, smell and color. The evaluation of taste is the most difficult among these factors. To date, the evaluation of the taste of sake has been carried out through various kinds of chemical analyses and the relationship between chemical substances and taste has been investigated.⁽¹⁾ However, sensory tests are considered more important, although they provide no quantitative evaluation.

A multichannel taste sensor whose transducer is composed of lipid membranes can detect tastes in a manner similar to human gustatory sensation.^(2,3) The tastes of several beverages and foodstuffs such as coffee,⁽⁴⁾ beer⁽⁵⁾ and vegetables⁽⁶⁾ were studied using a sensor. Although sake was also examined,⁽⁷⁾ data obtained from the study was insufficient