

Thesis Title Metabolic Profiling Analysis of The *Koji* Amazake Product
 Fermented from Thai Jasmine Rice

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Degree Master of Science (Health and Biomedical Analytics)

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ABSTRACT

Koji amazake is a prebiotic fermented Japanese rice produced by koji mold originating in Japan. The benefits of the koji amazake include improved intestinal health, decreased cholesterol level, immunological function, etc. The high demand for Thai jasmine rice creates substandard grades, which can be fermented into koji amazake, boosting value while reducing waste. The objectives of this study were to find health benefit compounds in YoRice Thai jasmine rice amazake (JAS_AMA) metabolic profiling with a liquid chromatography quadrupole time-of-flight mass spectrometry instrument (LC-QTOF-MS/MS), comparing the results with Thai jasmine rice without fermentation overnight (JAS_bMIX), jasmine rice solution mixed with sucrose syrup (JAS_SYR), and commercial Japan koji amazake (JP_AMA). Candidate prebiotics identified through the LC-QTOF-MS/MS method were subsequently quantified via high-performance liquid chromatography with refractive index detection (HPLC-RID). The results of qualitative analysis of JAS_AMA have revealed a variety of compounds, including prebiotics such as isomaltooligosaccharide (IMOs), kojibiose, nigerose, other prebiotics, and other amino acid groups. This quantitative study found the IMOs to increase 5.95 times and the isomaltose to increase 2.62 times in JAS_AMA when compared with JAS_bMIX. Additionally, the *in vitro* study found the prebiotic effect in JAS_AMA. This study demonstrated that JAS_AMA contains the IMOs prebiotics that have the potential to promote human digestive health.

Keywords: Koji Amazake, Metabolic Profiling, Isomaltooligosaccharide