

<b>Research Title</b>	Protective Effect of Fermented Black Glutinous Rice Variety Leum Phua against Oxidative Stress in Intestinal Human Cell Line (Caco2-cell)
<b>Researcher</b>	Dr. Yossaporn Plaitho
<b>Research Consultants</b>	Assoc. Prof. Kaew Kangsadalampai Asst. Prof Dr. Akkarach Bumrungpert
<b>Organization</b>	Department of Nutrition and Culinary, School of Culinary Arts, Suan Dusit University
<b>Year</b>	2016

The aim of this study was to determine the contents of vitamin E, total polyphenols, total anthocyanins, gamma oryzanol, the antioxidant activity and the activity against oxidative stress in intestinal human cell line (Caco2-cell) of non-digested and *in vitro* digested Kao Mak. Kao Mak was prepared by fermenting cooked black glutinous rice (*Oryza sativa* L. variety Leum Phua) with Look Pang for 3 days. The results indicated that the *in vitro* digested Kao Mak contained higher vitamin E and total polyphenols than those of both non-digested one and cooked black glutinous rice, respectively. However, it was shown that non-digested Kao Mak had the highest amount of total anthocyanins while cooked black glutinous rice had the highest amount of gamma oryzanol. The antioxidant activities assayed using DPPH and FRAP methods showed that the *in vitro* digested Kao Mak exhibited higher antioxidant capacities than those of the non-digested one and the cooked black glutinous rice, respectively. The most interesting result of this study was the secretion of IL-8 by caco2-cell treated simultaneously with the extract from each sample and H<sub>2</sub>O<sub>2</sub> significantly reduced ( $p < 0.05$ ) compared with that of the positive control group (treated with H<sub>2</sub>O<sub>2</sub> alone). In addition, it was found that *in vitro* digested Kao Mak had better inhibition on IL-8 secretion than that of both non-digested one and cooked black glutinous rice, respectively.

Keywords: Black glutinous rice, Kao Mak, *in vitro* digestion, antioxidant activity, oxidative stress