

## **Phytochemical Analysis and Toxicity Assessment of Bouea Macrophylla Yoghurt**

### **ABSTRACT**

The Bouea macrophylla fruit is native to Malaysia and is known for its many beneficial effects on one's health. Probiotics are well-known for their roles as anti-inflammatory, antioxidant, and anti-tumour properties due to their widespread use. As a result, the purpose of this study was to incorporate the ethanolic extract of Bouea macrophylla into yoghurt and then assess the rodents for any toxicological effects. According to the findings of the nutritional analysis, each 100 mL serving of the newly formulated yoghurt contains 3.29 g of fat, 5.79 g of carbohydrates, 2.92 g of total protein, and 2.72 g of sugar. The ability of the newly developed yoghurt to stimulate the growth of Lactobacilli was demonstrated by the fact that the peak intensity of Lactobacillus species was measured at  $1.2 \times 10^6$  CFU/g while the titratable acidity of the lactic acid was measured at 0.599 CFU/g. In order to carry out the toxicological evaluation, forty-eight male Sprague Dawley (SD) rats were utilized. Oral administration of single doses of 2000 mg/kg over the course of 14 days was used for the study of acute toxicity. Subacute toxicity was studied by giving animals Bouea macrophylla yoghurt (BMY) at repeated doses of 50, 250, 500, and 1000 mg/kg/day over a period of 28 days, while the control group was given normal saline. The results of the acute toxicity test revealed that rats treated with increasing doses up to a maximum of 2000 mg/kg exhibited no signs of toxicity. After an additional 14 days without treatment, acute toxicity of a single dose (2000 mg/kg) of BMY did not show any treatment-related toxicity in any of the rats that were observed. According to the data from the subacute toxicity study, there were no differences between the treated groups and the control groups in terms of food and water intake, body weight, plasma biochemistry (AST, ALT, ALP, and creatinine), haematological products, or organ weights. The architecture of the liver, heart, and kidney were all found to be normal upon histological examination. This indicates that oral consumption of BMY did not result in any negative effects being manifested in the rodents.