Studies on Safety and Taxicity of the Consumption of Pectin-like Substance Isolated from Durian Rind

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ABSTRACT

Safety studies on the consumption of pectin-like substance isolated from Durian rind were determined, using laboratory animals (mice). Durian-rind extracts, crude fraction (F I) and partially purify fraction (F II), were given to groups of mice, food and water provided ad libitum. Preliminary test with high doses of Durian rind extracts were fed every day for 10 days. The results of good weight gain were observed. Groups of mice receiving F I 0.125 g/kg/d, F II 0.125 g/kg/d, 0.25 g/kg/d and 0.5 g/kg/d revealed good weight gain compared to control group. No differences in organ weights and its appearance determined by gross examination were observed.

Safetytest on high doses of Durian rind extracts given every day for 60 days assay period were examined, using assemble groups of 15 mice, males, 20-25 g. initial weights. Body weight gains of experimental animals were record. A group of mice receiving F II 0.5 g/kg/d showed normal body weight gain for the first 15-20 days compared to group control and group receiving pectin 0.25 g/kg/d. After the day 20 until 60 days of assay period the mean value of body weight gain was found rather lower than control group and groups receiving F I or F II 0.25 g/kg/d. The latter

two groups showed good body weight gain comparable to group control and group receiving pectin 0.25 g/kg/d throughout of 60 days tested. No changes of organ appearance examined by gross lung and kidney, were observed. Only group receiving F II 0.5 g/kg/d had a little lower relative weight of liver compared with control group, group receiving pectin 0.25 g/kg/d and groups receiving F I or F II 0.25 g/kg/d. The latter four groups gave comparable relative weights of liver.

The examination of serum glucose, creatinine BUN and enzymes such as alkaline phosphatase and transaminase (SGOT, SGPT) were determined. No differences in serum examination were found compared to control. It was noteworthy to indicate that serum cholesterol in groups receiving F I and F II revealed at lower level of normal range compared to control.

No Changes in hematologic studies were observed. Percentages of hematocrit and hemoglobin were normal. Normal blood count of RBC and WBC were observed. There were no differences in white blood cells such as PMN, Band, Lymphocyte, Monocyte, Eosinophil and Basophil.

Acute toxicity test was done with a very high dose of F II 0.5 g/kg, 3 times for one day. Normal behaviour of animals (mice) was observed for 3 days of experimental period. Only decreasing in body weight at the first day of the experiment was observed. However, body weight gain of the animals (mice) was normal at the second and the third day of observation. No differences in organ appearance examined by gross examination.