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COCOA HUSK BEAN EXTRACT’S CITOCITICITY TEST OF THE BHK-21 FIBROBLAST CELL USING MTT ASSAY METHOD

ABSTRACT

**Background:** The cocoa bean’s husk is a waste material in the chocolate’s industry that known to contain a large amount of polyphenols and dietary fibers. The chemical contents of the cocoa bean’s husk which are epicatechin, oleic acid and linoleic acid have an activity of anti-glucosyltransferase (GTF) and anti bacteria that can inhibit dental caries. Cacao bean husk’s extract in the concentration of 80mg/ml, 96mg/ml and 112mg/ml shows the anti-bacteria activity towards streptococcus mutan **Purpose:** The purpose of this study in to find out the citotoxicity of the cocoa bean husk’s extract, whether it is safe or not. **Method:** Cocoa bean husk’s extract is diluted to reach concentrations of 80 mg/ml, 96 mg/ml, 112 mg/ml, and then exposed onto fibroblasts in cell culture for 1 hour. Then, it was replicated for 6 times. The positive control which contains fibroblasts cells put in a well without any further treatment. Thus, the negative control is a good media that contain eagle media. In the second experiment, this study has the same concentration with the first one, but it was using cell that exposed for 24 hours. After this process has completed, media in the TC plate removed and washed with PBS for 5 times and then added with trysine versene. Then it was put in the MTT reagent into a well for 4 hours in an incubator at 37˚C until the solution changes its color to become a purple product, and then the DMSO was given to dissolve to formazan. The formazan optical density values were calculated by Elisa reader at wavelength 630nm. **Result:** The result show that the percentage of living cells nearly 100% at concentrations 80mg/ml, 96mg/ml and 112 mg/ml, on each 1 hour and 24 hours incubation show the percentage of living cells, those are 66.67%, 91.43%, 94.28% and 72.06%, 95.55%, 100.26%. On the results of analytical research there is any significant difference between the 1 hour and 24 hours incubation time (p<0.05), but in this research, fibroblast cell not sustain death either on 1 hour or 24 hours incubation time. **Conclusion:** The conclusion is cocoa bean husk’s extract in concentration of 80 mg/ml, 96mg/ml and 112 mg/ml are safe and they do not toxic toward fibroblasts cells.

**Keyword:** cocoa husk bean, cytotoxicity, MTT assay