Effect Of Ethanolic Extract Herba Pegagan To Activity Of Reactive Oxygen Intermediates Secretion Of Peritoneal Macrophag Spc1 Induced-male Swiss Mice

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ABSTRACT

Background: Macrophage has a very important immunologic role in anticancer defense. Activity of macrophages as an anticancer can be assessed by the secretion of reactive oxygen intermediates (ROI). Centella asiatica herb has been used by Indonesian community as enhancing endurance, but its scientific evidence is lacking. This study aimed to determine the secretion activity of ROI of peritoneal macrophages female swiss mice induced SPC-1 cells after being given a herb Centella asiatica ethanolic extract (EHEP).

Methods: This study used 21 female swiss mice, weighing between 20-30 grams. Mice are divided into 6 groups. Group I as a negative control group has been given peroral aquadest. Group II as a positive control group has been given peroral Imboost. Group III, IV, V and VI as the treatment groups, each has been given Centella asiatica ethanolic extract at a dose of 1.5, 15, 150 and 1500 mg/kgBW/day peroral for 14 days. On the 15th day, all mice have been injected SP-C1 cells in subcutaneous area under the breasts and seen the growth of the cancer until the day 20-30. After that, on day 31 all mice have been inoculated with SP-C1 cells again. On day 37, all mice have been sacrificed. Peritoneal macrophages have been isolated and cultured, the ROI was tested with the NBT assay. The data were analyzed using Kolmogorov-Smirnov test and Levene test for normally distributed data and to know homogeneity of variance. Data have been analyzed using Anova test and LSD test with a confidence level of 95%.

Results: The results showed the percentage of ROI secretion of each experimental group at doses 1.5, 15, 150 and 1500 mg/kgBW/day EHEP is 13.0 ± 2.6%, 22.0 ± 9.2%, 23.6 ± 3.1% and 21.8 ± 5.8%. Doses 15, 150 and 1500 mg/kgBW/day of ethanolic extract of Centella asiatica herb can increase the activity of ROI secretion by peritoneal macrophages of female swiss mice induced SPC-1 cell. Increasing activity of ROI secretion by peritoneal macrophages of the experimental groups statistically did not differ with the positive control group.

Conclusion: Ethanolic extract of Centella asiatica herb doses 15, 150 and 1500 mg/kgBW/day can increase the activity of ROI secretion by peritoneal macrophages of female Swiss mice induced SP-C1 cells.

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Keyword: Herbs of etanol essence (Centella asiatica L. Urb), reactive oxygen intermediates (ROI) secretion, cell of cancer SP-C1, Swiss female mice