ACTIVITY OF THE COMBINATION OF *Echinacea purpurea* AND *Andrographis paniculata* TO TOTAL AND DIFFERENTIAL LEUKOCYTE COUNT IN RATS EXPOSED TO HEAT STRESS

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**ABSTRACT**

Increasing global temperature can cause high risk of exposure to heat stress. Long term exposure of heat stress can change leukocyte profiles which are caused by high level of glucocorticoids in blood. The combinations of *E. purpurea* and *A. paniculata* have immunostimulatory effects that can enhance the immune response. The aim of this study was to know the activity of the combination of *E. purpurea* and *A. paniculata* to prevent the negative effect in rats which are exposed to heat stress. This study used 20 rats with four different treatments: P0 (without the combination of EP and AP), P1 (dose of combination given 0.018 caps/200g/day), P2 (two times of P1 dose), P3 (three times of P1 dose). Heat stress exposure lasted for two times 30 minute with 39-40°C and 15-minute interval. The total and differential leukocyte count was performed on the last day of heat stress exposure. Statistical analyses used ANOVA and Tukey test. The result showed differences in total and differential count but not significant ($p>0.05$). Conclusion of this study that activity of combination of *E. pupurea* and *A. paniculata* could not increase significantly to total and differential leukocyte count in rats exposed to heat stress.

**Key words**: *Echinaceae purpurea, Andrographis paniculata, Heat stress, Total and differential leukosit.*