

ABSTRAK

Asap rokok mengandung bahan kimia berbahaya dan radikal bebas yang berpotensi menimbulkan inflamasi, salah satunya ditandai dengan peningkatan jumlah limfosit dan neutrofil pada darah. Delima merah (*Punica granatum*) merupakan buah yang banyak mengandung polifenol flavonoid, punicalgin, tanin, dan elagitanin yang berpotensi menghambat inflamasi yang terjadi akibat paparan asap rokok. Tujuan penelitian ini adalah mengetahui pengaruh ekstrak etanol buah delima merah terhadap jumlah limfosit dan neutrofil pada mencit yang dipapar asap rokok. Subjek penelitian menggunakan 35 ekor mencit yang dibagi dalam 5 kelompok: kontrol positif, kontrol negatif, perlakuan ekstrak etanol buah delima merah dosis 3,5gr/20grBB dan 7gr/20grBB, dan paparan asap rokok sekunder. Paparan asap rokok diberikan 6 batang rokok/hari yang dilakukan selama 14 hari. Limfosit dan neutrofil darah mencit diperoleh dari ekor mencit, yang kemudian hitung melalui *differential count*. Analisis data jumlah limfosit dan neutrofil menggunakan uji Anova.

Hasil penelitian menunjukkan terdapat pengaruh yang bermakna pada pemberian ekstrak etanol buah delima merah terhadap penurunan jumlah limfosit ($p=0,000$) dan neutrofil ($p=0,034$) pada mencit yang dipapar asap rokok ($p<0,05$). Berdasarkan penelitian dapat disimpulkan, ekstrak etanol buah delima berpotensi menghambat inflamasi dengan dosis tertentu.

Kata kunci : Asap rokok, Delima Merah, Limfosit, Neutrofil.

ABSTRACT

Cigarette smoke contains harmful chemicals and free radicals that have potential to cause inflammation, one of which is characterized by an increase in the number of lymphocytes and neutrophils in the blood. Red pomegranate (*Punica granatum*) is a fruit that contains lots of punicalgin, ellagic acid, flavonoid polyphenols, tannins, and elagitanin. This compound has potential to inhibit inflammation that occurs due to exposure to cigarette smoke. The purpose of this study was to determine the effect of red pomegranate ethanol extract on number of lymphocytes and neutrophils in mice exposed to cigarette smoke. This research method was analytic research with an experimental design. The research subjects used 35 mice divided into 5 groups: positive control, negative control, red pomegranate extract treatment of 3.5 gr / 20grBB and 7gr / 20grBB, and secondary cigarette smoke exposure. Exposure to cigarette smoke was given 6 cigarettes / day. The study was conducted for 14 days. Lymphocytes and neutrophils of mice were obtained from the tails of mice, which then count with a differential count. Data analysis of lymphocyte and neutrophil counts used Anova test.

The results showed a significant effect on ethanol extract of red pomegranate on the decrease in the number of lymphocytes p value = 0,000 and neutrophils p value = 0,034 in mice exposed to cigarette smoke ($p < 0.05$). Based on this research, pomegranate extract has potential effect to inhibit inflammation with spesific doses.

Keywords : *Cigarette smoke, Red Pomegranate, Lymphocyte, Neutrophil.*