# Evaluasi pengaruh pemberian ekstrak jahe merah (zingiber officinale var. rubrum) dan secang (caesalpinia sappan l.) terhadap kadar PCSK9 plasma pada hewan model hiperlipidemia = Evaluation of the effect of red ginger (zingiber officinale var. rubrum) and sappan wood (caesalpinia sappan l.) extracts on plasma PCSK9 levels in hyperlipidemic animal models

Nur Afifah, author



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Abstrak

Penyakit kardiovaskular merupakan salah satu penyakit dengan morbiditas yang tinggi di Indonesia. Salah satu faktor utama penyebabnya yaitu hiperlipidemia yang juga berkaitan dengan aktivasi platelet yang memicu pembentukan trombus. PCSK9 (Proprotein Convertase Subtilisin/Kexin 9) diketahui terlibat dalam metabolisme lipid karena mampu mendegradasi reseptor LDL (Low Density Lipoprotein Cholesterol) sehingga mempengaruhi kadarnya dalam plasma. Penelitian terkait PCSK9 juga telah menghasilkan adanya hubungan langsung antara PCSK9 dengan aktivasi platelet. Rimpang jahe merah dan kulit kayu secang merupakan tanaman yang dikenal khasiatnya turun temurun oleh masyarakat Indonesia. Berdasarkan penelitian yang telah ada ditemukan potensi ekstrak jahe merah dan secang sebagai antiplatelet. Pada penelitian ini dilakukan evaluasi efek pemberian 3 kombinasi ekstrak jahe merah secang terhadap kadar PCSK9 sebagai marker aktivasi platelet dengan heman model hiperlipidemia yang diinduksi HFD (High Fat Diet). Kadar kolesterol total dan trigliserida dari 18 ekor sampel plasma tikus Wistar jantan pada minggu ke-8 diukur dengan spektro UV kemudian diperoleh hasil signifikan (p<0,05) dibanding kelompok normal. Pada minggu ke-8 hingga 10 tikus tetap diinduksi HFD dan juga diberikan perlakuan berbeda setiap kelompoknya dengan tambahan pemberian CMC 0,5% pada kelompok normal dan negatif, aspirin dosis 81 mg/KgBB pada kelompok positif dan tiga variasi dosis kombinasi ekstrak jahe merah dan secang. Pada minggu ke-10 kadar PCSK9 plasma diukur dan diperoleh bahwa dosis 3 ekstrak jahe merah-secang (800:200 mg/200 g BB tikus) memberikan hasil kadar PCSK9 terendah secara deskriptif dan berbeda signifikan dengan kadar PCSK9 kelompok negatif (p<0.05).<

.....Cardiovascular disease is one of the diseases with high morbidity in Indonesia. One of the main factors causing hyperlipidemia is also related to platelet activation that triggers thrombus formation. PCSK9 (Proprotein Convertase Subtilisin/Kexin 9) is known to be involved in lipid metabolism because it is able to degrade LDL (Low Density Lipoprotein Cholesterol) receptors so that it affects its plasma levels. Studies related to PCSK9 have also shown a direct relationship between PCSK9 and platelet activation. Red ginger rhizome and sappan wood are plants that are known for their usefulness from generation to generation by the people of Indonesia. Based on existing research, it was found the potential of red ginger extract and secang as an antiplatelet. In this study, an evaluation of the effect of giving 3 combinations of red ginger and sappan wood extract of PCSK9 levels as a marker of platelet activation was carried out with the HFD (High Fat Diet) induced hyperlipidemia animal model. Total cholesterol and triglyceride levels from 18 male Wistar rat plasma samples at week 8 were measured by UV spectrophotometer. Then, significant results were obtained (p<0.05) compared to the normal group. At week 8 to 10 the rats were still induced by HFD and also given different treatment for each group with the addition of 0.5% CMC in the normal and negative

groups, aspirin dose of 81 mg/Kg BW in the positive group and three variations of the dose of red ginger and sappan wood extract combination. At week 10, plasma PCSK9 levels were measured and it was found that a dose 3 of red ginger and sappan wood extracts (800:200 mg/200 g BW rats) gave the lowest PCSK9 levels descriptively and significantly different from PCSK9 levels in the negative group ($p<0,05$).