

## PENGARUH 7-HIDROKSI-2-(4-HIDROKSI-3-METOKSI-FENIL)- KROMAN-4-ON TERHADAP EKSPRESI SREBP-2 DAN HMG COA REDUKTASE HEPAR MODEL TIKUS HIPERLIPIDEMIA

### INTISARI

**Latar Belakang :** Peningkatan kolesterol akan meningkatkan resiko penyakit jantung dan stroke. SREBP-2 adalah faktor transkripsi untuk gen pada sintesis kolesterol yang dapat menginduksi peningkatan ekspresi HMG CoA reduktase yang merupakan enzim kunci sintesis kolesterol. Senyawa 7-hidroksi-2-(4-hidroksi-3 metoksi-fenil)-kroman-4-on yang berasal dari biji mahoni (*Swietenia macrophylla* K) adalah senyawa golongan flavonoid. Komponen ini diketahui memiliki aktivitas sebagai antioksidan dan hipokolesterolemi.

**Tujuan :** Mengkaji pengaruh senyawa 7-Hidroksi-2-(4-Hidroksi-3-Metoksi-Fenil)-Kroman 4-on terhadap ekspresi SREBP-2 dan HMG CoA reduktase hepar model tikus hiperkolesterolemia.

**Metode :** Lima belas ekor tikus dikelompokkan menjadi 3 kelompok yang terdiri atas kelompok normal (N), kelompok hiperkolesterolemia (HL), kelompok hipokolesterolemia dengan isolat 7-hidroksi-2-(4- hidroksi-3- metoksi-Fenil)-kroman-4-on. Induksi hiperkolesterolemia menggunakan kolesterol murni 1% selama satu minggu. Ekspresi SREBP-2 dan HMG CoA reduktase dianalisis dengan metode *quantitative polimerase chain reaction* (PCR)

**Hasil:** Ekspresi SREBP-2 tinggi setelah diinduksi isolat flavonoid 7-hidroksi-2-(4-hidroksi-3- metoksi-Fenil)-kroman-4-on ( $P>0,05$ ) . Ekspresi HMG CoA reduktase tinggi setelah diinduksi isolat flavonoid 7-hidroksi-2-(4- hidroksi-3- metoksi-Fenil)-kroman-4-on ( $P<0,05$ ).

**Kesimpulan:** Senyawa flavonoid 7-hidroksi-2-(4-hidroksi-3-metoksi-fenil)-kroman-4-on meningkatkan ekspresi SREBP-2 dan HMG CoA Reduktase di hepar model tikus hiperkolesterolemia.

**Kata Kunci :** 7-hidroksi-2-(4-hidroksi-3-metoksi-Fenil)-kroman-4-on, SREBP-2, HMG CoA Reduktase, qPCR

**EFFECT OF 7-HYDROXY-2- (4-HYDROXY-3-METHOXY-PHENYL) -  
CHROMAN-4-ONE TO SREBP-2 AND HMG COA REDUCTASE  
EXPRESSION IN HYPERCHOLESTEROLEMIA RATS**

**ABSTRACT**

**Background:** Elevated cholesterol increases risk of heart disease and stroke . SREBP-2 is a transcription factor for genes in the synthesis of cholesterol which can induce increasing expression of HMG CoA reductase which is a key cholesterol synthesis enzyme. Seven-hydroxy-2- compounds (4-hydroxy 3 methoxy-phenyl) -chroman-4-on derived from Mahogany seeds (*Swietenia macrophylla* K) are flavonoid compounds. This component is known to have activity as an antioxidant and hypocholesterolemia.

**Objective:** To examine the effect of 7-Hydroxy-2- compounds (4-Hydroxy-3-Methoxy-Phenyl) -Chroman 4-on the expression of liver SREBP-2 and HMG CoA reductase in hypercholesterolemia Rat.

**Methods:** Fifteenth were grouped into 3 groups consisting of normal group (Normal), hypercholesterolemia group (Hyperchol), hypocholesterolemia group with 7-hydroxy-2- isolates (4- hydroxy-3- methoxy-phenyl) -kroman-4-on (Hyperlipid+Flavanoid). Hypercholesterolemia rats are given cholesterol 1% for a week. The expression of SREBP-2 and HMG CoA reductase was analyzed by *quantitative polymerase chain reaction* (qPCR)

**Results:** Expression of SREBP-2 is high after induction of 7-hydroxy-2- (4-hydroxy-3- methoxy-phenyl) -chroman-4-on flavonoids ( $P > 0.05$ ). The expression of HMG CoA reductase is high after induction of 7-hydroxy-2- (4- hydroxy-3- methoxy-phenyl) -chroman-4-on isolates ( $P < 0.05$ ).

**Conclusion:** 7-hydroxy-2- flavonoids (4-hydroxy-3-methoxy-phenyl) -kroman-4-on increase the expression of SREBP-2 and HMG CoA Reductase in the liver of hypercholesterolemia rat.

**Keywords:** 7-hydroxy-2- (4-hydroxy-3-methoxy-phenyl) -choman-4-one, SREBP-2, HMG CoA Reductase, qPCR