# Pengaruh Hambatan Sintesis Hem oleh Suksinil Aseton pada Ekspresi Sitoglobin dan Proliferasi Sel HepG2 = The Effect of Heme Synthesis Inhibition by Succinyl Acetone on Cytoglobin Expression and HepG2 Cell Proliferation

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Abstrak

Hem merupakan komponen penyusun hemoprotein, salah satunya yaitu sitoglobin. Sitoglobin diketahui memegang peranan dalam perkembangan kanker. Saat ini, belum diketahui peran hambatan hem terhadap ekspresi CYGB pada sel lini sel kanker hati, HepG2 Penelitian ini bertujuan untuk melihat kemampuan penghambatan hem dalam mencegah proliferasi sel HepG2. Penghambatan hem dilakukan dengan menggunakan suksinil aseton.  Analisis aktivitas enzim ALAD diukur secara kolorimetrik. Analisis viabilitas dan proliferasi (doubling time) dilakukan dengan menggunakan MTT assay. Analisis ekspresi mRNA CYGB dilakukan dengan qRT-PCR. Ekspresi protein CYGB dianalisis dengan ELISA. Hasil yang diperoleh adalah hambatan sintesis hem pada sel HepG2 dengan menggunakan suksinil aseton berhasil dilakukan. Penurunan sintesis hem berdampak pada menurunnya ekspresi CYGB baik tingkat mRNA maupun protein. Viabilitas dan proliferasi sel HepG2 menurun seiring dengan meningkatnya konsentrasi suksinil aseton. Sebagai kesimpulan, pemberian suksinil aseton mampu menghambat sintesis hem karena menekan ekspresi CYGB yang berdampak pada penurunan viabilitas dan proliferasi sel HepG2.
.....Hem is a component of hemoprotein, one of which is cytogloblin. Cytoglobin is known to play a role in cancer development. Currently, the role of heme inhibitors on CYGB expression in the liver cancer cell line, HepG2, is unknown. This study aims to see the ability of heme inhibition in preventing HepG2 cell proliferation. Hem inhibition was carried out using succinyl acetone. Analysis of ALAD enzyme activity was measured colorimetrically. Viability and proliferation (doubling time) analyzes were performed using the MTT assay. Analysis of CYGB mRNA expression was performed by qRT-PCR. CYGB protein expression was analyzed by ELISA. The results obtained were thatinhibition of hem synthesis in HepG2 cells using succinyl acetone was successfully carried out. Decreased heme synthesis resulted in decreased CYGB expression both at the mRNA and protein levels. HepG2 cell viability and proliferation decreased with increasing succinyl acetone concentration. In conclusion, succinyl acetone was able to inhibit hem synthesis cause it suppressed CYGB expression which had an impact on reducing the viability and proliferation of HepG2 cells.