

## ABSTRAK

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Program Studi : Kedokteran Umum  
Judul : Uji *In Vitro Self-Nano Emulsifying Drug Delivery System* (SNEDDS) Fraksi Etil Asetat Nanopartikel Kunyit terhadap Sel HepG2 dan Tinjauannya Menurut Pandangan Islam

**Latar Belakang :** *Curcuma longa L. (C. longa)* merupakan salah satu tanaman rimpang yang memiliki banyak manfaat, salah satunya adalah sebagai hepatoprotektor terhadap karbon tetraklorida (CCl<sub>4</sub>). Namun ditemukan masalah dalam pemanfaatan kunyit ini yaitu rendahnya kelarutan dalam air dan bioavailabilitasnya. Untuk mengatasinya diperlukan teknologi nano. Islam mengajarkan umatnya untuk selalu menjaga kesehatan. Sebagaimana sabda Rasulullah SAW : "*Wahai Abdullah bin Amru, telah sampai berita kepadaku bahwa kamu berpuasa sepanjang hari dan shalat sepanjang malam. Janganlah kamu lakukan, sebab jasadmu mempunyai hak atas dirimu, kedua matamu mempunyai hak atasmu, dan isterimu juga punya hak atasmu. Karena itu, hendaknya kamu puasa dan juga berbuka. Berpuasalah tiga hari pada setiap bulannya, sebab itulah sebenarnya puasa sepanjang masa.*".

**Metode :** Penelitian diawali dengan kultur sel HepG2 menggunakan medium DMEM yang diinkubasi selama 24 jam, kemudian diberikan perlakuan sesuai dengan kelompoknya dan diinkubasi kembali selama 24 jam. Setelah itu dibilas dengan FBS kemudian diberikan CCl<sub>4</sub> 1% dan diinkubasi kembali selama 4 jam. Terakhir dilakukan perhitungan viabilitas dengan *UV Microplate Reader*.

**Hasil :** Fraksi etil asetat nanokurkumin yang difasilitasi *Self-Nano Emulsifying Drug Delivery System* (SNEDDS) menunjukkan efek hepatoprotektor namun tidak begitu efektif.

**Kesimpulan :** Pemberian nanokurkumin fraksi etil asetat memberikan sedikit efek hepatoprotektor. Islam juga mendukung umatnya untuk melakukan penelitian, sebagaimana firman Allah SWT dalam Q.S. Al-Ghasiyah (88): 17-20 : "*maka apakah mereka tidak memperhatikan unta bagaimana diciptakan, dan langit bagaimana ia ditinggikan? Dan gunung-gunung bagaimana ia ditegakkan? Dan bumi bagaimana ia dihamparkan?*".

**Kata Kunci :** *Curcuma longa L.*, Fraksi etil asetat, Nanopartikel, *Self-Nano Emulsifying Drug Delivery System* (SNEDDS), Hepatoprotektor, Sel HepG2

## **ABSTRACT**

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*Study Program : Medicine*

*Title : In Vitro Test of Self-Nano Emulsifying Drug Delivery System (SNEDDS) Ethyl Cetate Fraction of Turmeric Nanoparticles Against HepG2 Cells And According To Islamic Views*

**Background :** *Curcuma longa L. (C. longa) is a rhizome plant that has many benefits, one of which is as a hepatoprotector against carbon tetrachloride (CCl<sub>4</sub>). However, problems found in the utilization of turmeric are low water solubility and bioavailability. To overcome this, nano technology is needed. Islam teaches its people to always maintain health. As the Prophet SAW said: "O Abdullah bin Amru, the news has reached me that you are fasting all day long and praying all night. Do not do this, because your body has rights over you, your eyes have rights over you, and your wife has rights over you. that, you should fast as well as break the fast. Fast three days each month, because that is actually fasting all the time. "*

**Method :** *The study began with HepG2 cell culture using DMEM medium which was incubated for 24 hours, then given treatment according to the group and incubated again for 24 hours. After that, it was rinsed with FBS then given CCl<sub>4</sub> 1% and incubated again for 4 hours. Finally, the viability calculation was carried out with the UV Microplate Reader.*

**Result :** *The ethyl acetate nanocurcumin fraction facilitated by the Self-Nano Emulsifying Drug Delivery System (SNEDDS) showed a hepatoprotector effect but was not very effective.*

**Conclusion :** *Ethyl acetate fraction nanocurcumin administration gave a little hepatoprotector effect. Islam also supports its people to do research, as Allah SWT says in Q.S. Al-Ghasyiyah (88): 17-20: "Then do they not pay attention to how the camel was created, and how the sky is lifted up? And how are the mountains raised? And how is the earth spread out? "*

**Keywords :** *Curcuma longa L., Ethyl acetate fraction, Nanoparticles, Self-Nano Emulsifying Drug Delivery System (SNEDDS), Hepatoprotector, HepG2 Cells*