

## Cytotoxicity of $\alpha$ -terpineol in HeLa cell line and its effects to apoptosis and cell cycle

<b>Title</b>	Cytotoxicity of $\alpha$ -terpineol in HeLa cell line and its effects to apoptosis and cell cycle
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<b>Abstract</b>	<p><math>\alpha</math>-Terpineol is a natural compound of terpenoid alcohols class. However, it can be synthesized from <math>\alpha</math>-pinene of turpentin content. <math>\alpha</math>-Terpineol has been reported as potential anticancer agent due to its activity on inhibition of cells growth and induction of tumor cell death. However, its anticancer activity in HeLa cervical cancer cells line has never been studied, yet. The aim of this study was to evaluate the cytotoxicity of <math>\alpha</math>-terpineol and its effects to apoptosis and cell cycle. This was a quasi-experimental study with post-test only with non-equivalent control group design. Cytotoxicity of <math>\alpha</math>-terpineol was evaluated using MTT cell viability assay. The effect of <math>\alpha</math>-terpineol on cell apoptosis was tested using acridine orange-ethidium bromide staining method, whereas its effect on cell cycle was evaluated by flow cytometry method. The results showed that <math>\alpha</math>-terpineol had cytotoxicity against HeLa cell with an IC<sub>50</sub> value about 12.46 <math>\mu</math>g/mL. Furthermore, <math>\alpha</math>-terpineol induced the HeLa cell with an IC<sub>50</sub> value about 13.12 <math>\mu</math>g/mL. Cell accumulation at G1 phase during cell cycle after incubation with <math>\alpha</math>-terpineol (52.78) was observed. In conclusion, <math>\alpha</math>-terpineol is potential as an anticancer due to its ability to induce cell apoptosis and to inhibit the cell cycle at G1 phase.</p>
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