Acetylcholinesterase Inhibitory Activity of Extract and Fractions from Root of 
*Rauvolfia serpentina* (L.) Bth.ex Kurz

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**Background:** Alzheimer’s disease is a degenerative brain disease characterized by confusion, behavior changes, decline memory and cognitive skills. One of the strategies in the treatment of Alzheimer’s disease is to use acetylcholinesterase (AChE) inhibitors. The potency of plants containing alkaloids as cholinesterase inhibitors is quite high. The plant *Rauvolfia serpentina* is a major source of biologically active indole alkaloids.

**Aims:** The aims of the current study are to determine the AChE inhibitor activity of the extract and fractions of *Rauvolfia serpentina* root as well as to determine the presence of alkaloid compounds.

**Result:**

**▼ Ethanol extract**

IC$_{50}$ value: 14.31 ± 0.92 µg/mL

![Fig. 3: Dose response of ethanolic extract](image)

**▼ % Inhibition n-Butanol Subfraction**

IC$_{50}$ of n-butanol fraction was 5.99 µg/mL. VLC fractionation of the n-butanol fraction yielded 13 subfractions (VLC 1-VLC 13). Four out of 13 subfractions gave more than 80% inhibition against AChE, namely subfractions 4 – 7.

![Table 1: % Inhibition n-Butanol Subfraction](image)

**▼ TLC Screening of Alkaloid**

Phytochemical screening of subfractions 4 to 7 by using TLC method, visualized with Dragendorff dyes. The result indicated the presence of alkaloid in the active subfractions.

![Fig. 7: Results of phytochemical screening using TLC method](image)

**Conclusion:** The ethanolic extract as well as fractions of *R. serpentina* root are potential for AChE inhibitor. The alkaloid compound may be responsible for this activity.

**References:**


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