SHORT COMMUNICATION

Neuroprotective effect from stem bark extracts of *Knema laurina* against \( \text{H}_2\text{O}_2 \)- and \( \text{A}_\beta_{1-42} \)-induced cell death in human SH-SY5Y cells

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The stem bark extracts of *Knema laurina* inhibited the hydrogen peroxide (\( \text{H}_2\text{O}_2 \))- and aggregated amyloid \( \beta \)-peptide 1–42 length (\( \text{A}_\beta_{1-42} \))-induced cell death in differentiated SH-SY5Y cells. Exposure of 250 \( \mu \text{M} \) \( \text{H}_2\text{O}_2 \) or 20 \( \mu \text{M} \) \( \text{A}_\beta_{1-42} \) to the cells for 24 h reduced 50% of cell viability. Pretreatment of cells with ethyl acetate extract (EAE) or \( n \)-butanol extract (BE) at 300 \( \mu \text{g/mL} \) and then exposure to \( \text{H}_2\text{O}_2 \) protected the cells against the neurotoxic effects of \( \text{H}_2\text{O}_2 \). Besides, methanolic extract (ME) at 1 and 10 \( \mu \text{g/mL} \) exerted neuroprotective effect on \( \text{A}_\beta_{1-42} \)-induced toxicity to the cells. These results showed that EAE, BE and ME exhibited neuroprotective activities against \( \text{H}_2\text{O}_2 \)- and \( \text{A}_\beta_{1-42} \)-induced cell death. Flavonoids (3–6) and \( \beta \)-sitosterol glucoside (8) were isolated from the EAE. Compound 1 was isolated from hexane extract, and compounds 2 and 7 were isolated from dichloromethane extract. All these observations provide the possible evidence for contribution in the neuroprotective effects.

**Keywords:** neuroprotective; *Knema laurina*; hydrogen peroxide; \( \text{A}_\beta_{1-42} \); SH-SY5Y cell; flavonoids

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