

Abstract

# The Cytotoxic Effect of *Lysimachia savoranii* on the Neuroblastoma Cells <sup>†</sup>

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**Abstract:** Neuroblastoma cells have been used for antitumoral mechanisms such as stopping the cell cycle and inducing apoptosis. The genus of *Lysimachia* is studied to determine its anti-proliferative effect. The aim of this study is to show the cytotoxic effect of *Lysimachia savoranii* on neuroblastoma cells *in vitro* conditions. Neuroblastoma cells and mesenchymal stem cells were cultured and treated with the extract of *Lysimachia savoranii* and IC50 dose was evaluated. The effects on cell viability, oxidative stress, neurite inhibition and apoptosis of *Lysimachia savoranii* at dose of IC50 were studied. In neuroblastoma cells, the rates of eNOS and iNOS stainings used for analysis of oxidative stress were greater than mesenchymal stem cells, and the difference was statistically significant ( $p < 0.005$ ). TUNEL assay to determine cell apoptosis in neuroblastoma cells was greater than mesenchymal stem cells and also the difference was statistically significant ( $p < 0.005$ ). The effects of *Lysimachia savoranii* was showed out *in vitro* on neuroblastoma cells and this plants can be analysis for its cytotoxic effect *in vivo* models.

**Keywords:** Neuroblastoma; *Lysimachia savoranii*; apoptosis; oxidative stress

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**Conflicts of Interest:** The authors declare no conflict of interest.



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