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Qualitative Analysis of *In Vivo* and *In Vitro* Propagated *Viola odorata* L.

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ABSTRACT

The present study was conducted to evaluate the qualitative phytochemical composition of ethanolic extracts obtained from *invivo* and *in vitro* propagated *Viola odorata* L. Phytochemical screening was carried out using standard qualitative tests for alkaloids, flavonoids, phenols, tannins, saponins, carbohydrates, terpenoids, and glycosides. The results revealed the presence of most phytochemical constituents in both extracts, indicating comparable phytochemical profiles between *in vivo* and *in vitro* propagated plants. Only Wagner's test for alkaloids showed negative results. The findings support the medicinal importance of *Viola odorata* L. and suggest that *in vitro* propagated plants can serve as a reliable alternative source of bioactive compounds for pharmaceutical and medicinal applications.

Keywords: *Viola odorata* L., phytochemical screening, medicinal plants, *in vitro*, *in vivo* propagation, secondary metabolites, ethanol extract