



## **Proceedings of the** YOUNG SCIENTISTS' CONFERENCE ON MULTIDISCIPLINARY RESEARCH

## VIRTUAL INTERNATIONAL CONFERENCE





Paper ID: CMT-095

## *In vitro* bioactive potential of leaf extracts from *Hyptis capitata*, Plectranthus *zaterhendi* and *Bauhinia variegata*

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The exploration of medicinal plants for bioactive compounds is crucial due to their potential therapeutic applications in treating various health conditions. This study investigated some bioactivities of leaf extracts of three plant species from Sri Lanka, Hyptis capitata ('Knobweed'), Plectranthus zatarhendi ('Iriweriya'), and Bauhinia variegata ('Koboleela'), collected from the Central Province. After shade drying, grinding, and extraction into methanol, the extracts were tested for bioassays: DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging and FRAP (Ferric Reducing Antioxidant Power) assays for antioxidants, α-amylase and lipase assays for antidiabetic and antiobesity effects, and brine shrimp lethality for cytotoxicity. H. capitata exhibited the strongest antioxidant activity (IC<sub>50</sub> 11.36  $\pm$  0.15 mg L<sup>-</sup> <sup>1</sup>) in the DPPH assay, compared to the positive control ascorbic acid (IC<sub>50</sub>  $1.97 \pm 0.02 \text{ mg L}^{-1}$ ). *P. zatarhendi* and *B. variegata* displayed moderate antioxidant effects with IC<sub>50</sub> 169.69  $\pm$  3.39 mg L<sup>-1</sup> and 204.34  $\pm$  2.04 mg L<sup>-1</sup>, respectively. The results of the FRAP assay corroborated these findings, with *H. capitata* recording the highest value  $(1.62 \pm 0.02 \mu mol FeSO4 /mg)$ , followed by *P. zatarhendi*  $(0.427 \pm 0.01 \mu mol FeSO_4 / mg)$  and *B. variegata*  $(0.799 \pm 0.01 \mu mol$ FeSO<sub>4</sub> /mg). The positive control, Trolox, showed a value of  $12.07 \pm 0.03 \mu$ mol FeSO<sub>4</sub>/mg. B. *variegata* demonstrated strong  $\alpha$ -amylase inhibitory activity (IC<sub>50</sub> 52.35 ± 3.31 mg L<sup>-1</sup>), almost similar to the positive control acarbose (IC<sub>50</sub> 45.99  $\pm$  3.97 mg L<sup>-1</sup>) and moderate lipase inhibition (IC<sub>50</sub> 150.75  $\pm$  5.26 mg L<sup>-1</sup>), compared to the positive control Orlistat (IC<sub>50</sub> of  $3.05\pm1.71 \text{ mg L}^{-1}$ ). P. zatarhendi showed weak activity in both assays (IC<sub>50</sub> 675.46 ± 12.13 mg  $L^{-1}$  for  $\alpha$ -amylase and IC<sub>50</sub> 901.27 ± 15.53 mg  $L^{-1}$  for lipase). *H. capitata* exhibited IC<sub>50</sub> > 1000 mg L<sup>-1</sup> in both enzyme inhibitory assays. P. zatarhendi exhibited notable cytotoxicity (LC<sub>50</sub> 311.00 mg L<sup>-1</sup>), compared to the positive control K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> (LC<sub>50</sub> 35.16 mg L<sup>-1</sup>), whereas B. variegata showed lower cytotoxicity (LC<sub>50</sub> 809.65 mg L<sup>-1</sup>). H. capitata exhibited weak cytotoxic effects. Overall, these findings highlight the potential of these plant species as sources of bioactive compounds for antioxidant, antidiabetic, and antiobesity therapeutic applications, emphasizing the need for further investigation into their specific chemical constituents.

Keywords: Antidiabetic, antioxidant, B. variegata, H. capitata, P. zatarhendi