ABSTRACT

Existence of life in this earth is a result of incomparable service offered by the plants to the living kingdom. Each and every part of a plant is dedicated for the continued existence of life in this world. Recent environmental issues attract public attention to the importance of conservation of plant in our ecosystem. Diseases and drugs are the two main concerns of humans in these highly polluted living conditions. It is widely accepted that plant derived products played a critical role in drug industry. Western Ghat’s of Kerala is a treasure home of medicinal plant and other natural resources. Studies of medicinal plant directly and indirectly promoted the message of importance of prudent management of our ecosystem. *Heracleum candolleanum* (Wight et Arn.) Gamble (Apiaceae) is an aromatic plant with tuberous root found endemic to Western Ghats. The study evaluated the presence of phytochemical compounds, nutrient values and antioxidant, anti-inflammatory and cytotoxicity activities of the plant. Preliminary phytochemical screening conducted with crude extracts of the seed, leaf and root in Petroleum ether, Chloroform and Methanol proved that methanol extract of root possess maximum number of phytocmpounds. *In vitro* antioxidant studies with free radical models showed that radical scavenging activity
of root is much more when compared with seed and leaf. *In vitro* anti-inflammatory activity was analyzed by using HRBC membrane stabilization test along with albumin denaturation and proteinase inhibition assays. The results clearly indicated that root extract can effectively minimize the inflammatory conditions by preventing protein denaturation and proteinase inhibition, the higher ability of root extract to stabilize HRBC membrane is a good indication of its credible anti-inflammatory property. The results showed that among the three extracts root is significantly cytotoxic in all the selected five cancer cell lines. The overall cytotoxic activity of methanol extract of seed and leaf were lower than that of methanol extract of root. The isolated active factor Bergapten from root showed promising antioxidant and anti-inflammatory activity against *in vitro* assay models.