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Anti-oxidant and anti-inflammatory potential of Cichorium intybus

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Background: Traditional medicine has historically utilized herbs of different kinds to treat a wide range of illnesses. The use of remedies derived from plants as a replacement for synthetic chemicals has received a lot of attention in modern times. While Cichorium intybus is frequently used in traditional medicine to treat various conditions, not enough research has been done to confirm its anti-oxidant and anti-inflammatory effect

Objectives: The current study aims to evaluate the antioxidant and anti-inflammatory activities of the plant's seed methanolic extract

Methodology: Maceration was used for getting the plant seed's methanolic extract. The sample underwent a physicochemical analysis in accordance with USP, 2016 requirements. The primary and secondary metabolites were evaluated both qualitatively and quantitatively in accordance with established protocols. The *in vitro* anti-inflammatory activity was investigated using the protein denaturation method, with diclofenac serving as the standard. To assess the anti-oxidant effect, phosphomilybednum, hydrogen peroxide scavenging assays, DPPH, and FRAP were used. The standard for antioxidant activity was vitamin C.

Results: The results of the investigation demonstrated that the physicochemical properties fell within the 2016 recommended range of the USP. The primary metabolites were estimated, and the results showed that there were more carbohydrates than fat or protein. The estimation of secondary metabolites showed that polyphenols are not as abundant as flavonoids. The study's findings demonstrated that seed methanolic extract significantly reduced inflammation in a way that was comparable to diclofenac's effects. In comparison to a reference drugs, the plant has also demonstrated notable antioxidant properties.

Conclusion: This study has demonstrated that Cichorium intybus has a wide range of phytochemicals that are required to maintain physiological function and may also be highly beneficial in the treatment of diseases. Antioxidant and anti-inflammatory qualities were demonstrated by Cichorium intybus. Prior to their application in therapeutic settings, more study is needed to ascertain the phytochemicals' method of action and to validate their safety and efficacy.

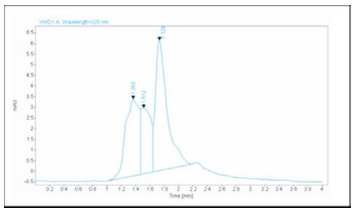

Figure 1 HPLC analysis of the Cichorium intybus seeds

Sr. No	Parameter1	Quantity (%)
1	Total ash	8.5
2	Acid insoluble ash	1.9
3	Water soluble ash	3.2
4	Moisture content	5.6

Table 1. Physicochemical analysis of the Cichorium intybus seeds

Sr. No.	Mineral	Quantity (mg/L)
1	Sodium	0.32
2	Calcium	12.67
3	Potassium	1.5
4	Lead	Not detected
5	Zinc	0.01
6	Iron	0.01

Table 2 .MineralContent analysis of the Cichorium intybus seeds

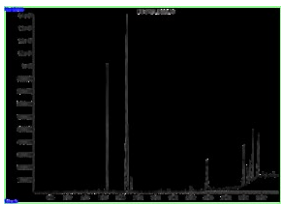

Figure 2. GCMS Analysis of the Cichorium intybus seeds

Biography

Khaled Alsubari is an expert in evaluation with a strong passion for improving health and wellbeing. He has developed an open and contextual evaluation model based on responsive constructivism, creating new avenues for enhancing healthcare. This model is built upon years of experience in research, evaluation, teaching, and administration, both in hospitals and educational institutions worked as a supervisor in a pharmaceutical and medical drugs company, where he gained extensive experience in the field of medications, their development, and marketing. He also has significant expertise in patient care within hospitals. His comprehensive background in both the pharmaceutical industry and healthcare has equipped him with a unique understanding of drug management and patient treatment strategies.

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