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*Original Article*

# Identification of the Major Fractioned Compounds and Bioactivity Testing from Crude Stevia Ethanolic Extracts.

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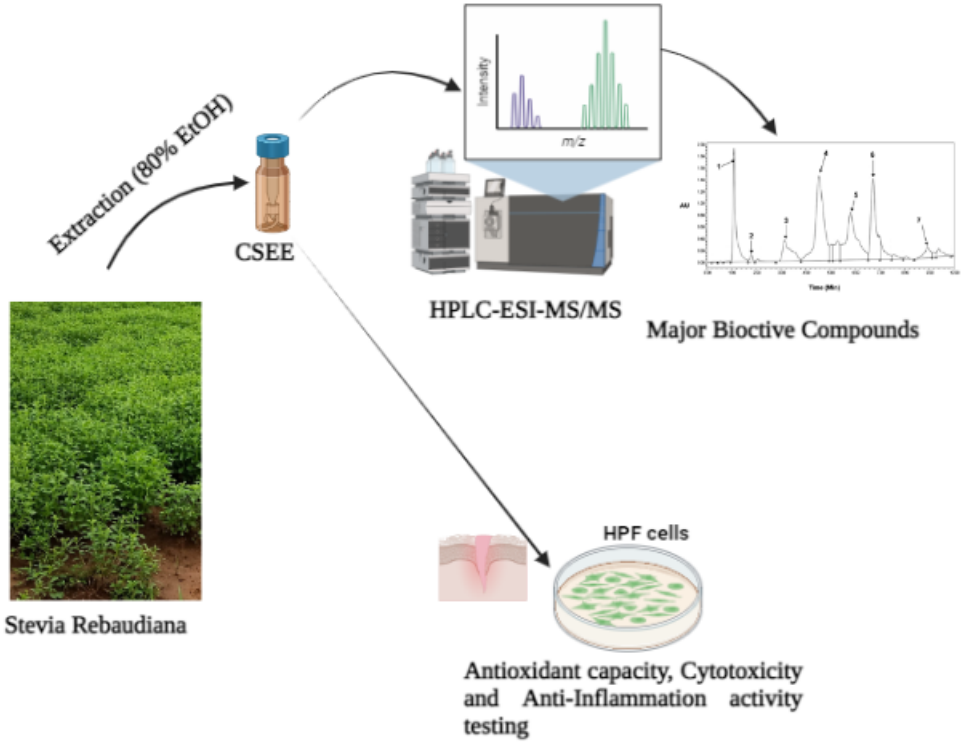
**Abstract:** A medicinal plant *Stevia rebaudiana* bertoni is considered as a natural non-caloric sweetener. The plant leaf has sweetness potency 200-350 times of sucrose. Diterpenoid steviol glycosides are abundant in stevia leaf which composed of various sweet compounds mostly stevioside and rebaudioside A and also other compounds. The aim of this study is to evaluate the number of other major bioactive compounds and to prove whether the crude stevia ethanolic extracts (CSEE) have biological activities. The first objective was to identify the major phytochemical profiles after separating the fraction from CSEE. Compound identities would lead to the information about possible biological and pharmacological properties of the compounds. So, the second objective was to test for biological activities of CSEE which would be toxicity, antioxidant, anti-inflammatory, and other reported properties in harmony with steviol glycosides. From crude stevia ethanolic extracts, we have determined major peaks by HPLC. We were able to collect 7 fractions according to their retention time as well as high base intensity peak chromatogram. Then those fractions were analyzed individually by LC-MS/MS. Those compounds were identified as oleamide, caffeic acid, apigenin-7-O-glucoside, quiercetin-3-O-rhamnoside, 3,4-dicaffeolquinic acid, pinocembrin-7-O-glucoside, protocatechuic acid, chlorogenic acid, rutin, and palmitamide. The CSEE was found to have high antioxidant property by DPPH assay. The extract also had low cytotoxicity and exhibited fastest cell migration in wound healing assay with human primary fibroblast cell at level up to 100 μg/ml. Form the data, stevia ethanolic extract is safe to be used for food supplement or cosmetic ingredient which would help to enhance some therapeutic properties for diseases caused by oxidative stresses and inflammation. Further investigations will use these compounds as key active ingredients for safety, quality control or evaluation of other biological efficacies of using stevia extracts.



**Graphical abstract:**




**Keywords: Keywords:** *Stevia rebaudiana*, Crude stevia ethanolic extracts (CSEE), HPLC, ESI-LC-MS/MS, Antioxidant, Anti-inflammation

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