عنوان مقاله:

Gas chromatography-mass spectrometry profiling and analgesic, anti-inflammatory, antipyretic, and antihyperglycemic potentials of Persea americana

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خلاصه مقاله:

Objective(s): The present study determines the chemical constituents of Persea americana using gas chromatography-mass spectrometry (GC-MS) and its different activities. Materials and Methods: Air-dried powdered leaves of Persea americana were extracted by ۹۵% methanol and fractionated consecutively with petroleum ether, chloroform, and ethyl acetate. The saponifiable matter, EtOAc and aqueous fractions were subjected to GC-MS. The analgesic, anti-inflammatory, antipyretic, and antihyperglycemic properties of extracts, different fractions, and crude polysaccharide were determined by hot plate, carrageenan-induced paw edema, yeast-induced pyrexia, and alloxan-induced hyperglycemia methods, respectively. Results: Fourteen fatty acid methyl esters were identified in GC-MS-based profiling of the saponifiable matter. Alongside, ۱۳ compounds were determined from EtOAc fraction and ۶ compounds from the aqueous fraction of P. americana leaves. The ethyl acetate fraction and total stem extract displayed high anti-inflammatory potential with percentage of paw edema reduction by ۴۸.۹۹ and ۴۷.۵۴ %, respectively, compared with that of indomethacin (۴۲.۹۰ %). The ethyl acetate fraction and total stem extract revealed the highest analgesic activity with ۱۳۷.۹۵ and ۱۳۷.۱۲ % percent of protection against external stimulus, respectively. Investigation of antipyretic efficiency showed the total stem extract and crude polysaccharides attained normal temperature after ۳ hr, which was very close to that of acetylsalicylic acid. The total leaf and stem extracts displayed significant antihyperglycemic activity with significant reduction in the level of blood glucose by ۷۶.۶۷ and ۵۹.۰۵ %, respectively.Conclusion: P. americana had analgesic, anti-inflammatory, antipyretic, and antihyperglycemic properties, which refer to its bioactive metabolites.

کلمات کلیدی:

Analgesic Antihyperglycemic Anti, inflammatory Antipyretic GC, MS analysis Persea americana