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**Cytotoxic activity of *Cassia tora* grown in different geographical area**

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*Cassia tora* Linn (Caesalpinaceae) is a well known oriental herb used in traditional medicine which grows up to 1-2 m in height and is found as a weed throughout India. The present study based upon Cytotoxicity of *Cassia tora* leaves and stem and their fatty acid methyl ester profiling, collected from two different locations in India. The plant material of *Cassia tora* (Leave, Stem) were collected in the month of July from, District-Unnao (Uttar Pradesh India) coded as CT-1 and Kathgodam (Uttarakhand India) coded as CT-2. The powdered plant material was extracted with Hexane in a Soxhlet extraction. The solvent was evaporated under reduced pressure at 400C. The fatty acid methyl esters (FAME) were prepared of the hexane extract and analyzed by GC and GC-MS. Palmitic acid and Linoleic acid was major fatty acid found in CT-1 Leaves (18.62%), (13.25%) CT-1 Stem (27.22%), (30.60%) and CT-2 Leaves (25.95%), (6.51%), CT-2 Stem (30.32%), (9.71%). Hexane extract of Leaves and Stem part of *Cassia tora* collected from Unnao and Uttarakhand were evaluated for Cytotoxicity against six human cancer cell lines Breast (BT-549, MDAMB-468, and MCF-7), Colon (SW48, LOVO and HT-29). The highest cell growth inhibition was shown by sample (CT-2) collected from Kathgodam (Uttarakhand); it is the potential source of Palmitic acid. Fatty acids are biologically important as Palmitic acid exhibits DNA topoisomerase I inhibitory activity which causes inhibition of replicating cancer cells. The present study reveals that *Cassia tora* collected from Uttarakhand is a potential source of Palmitic acid and possibly due to enriched amount of Palmitic acid it exhibited significant cytotoxic activity. *Cassia tora* stem are potential source of bioactive fatty acids can be used in various pharmaceutical products as they have gained considerable importance in the food evaluation, and also in the diagnosis of certain diseases and pharmacology.

**Biography**

Shipra Shukla has completed her MSc from CSJM Kanpur University and pursuing PhD from Mangalayatan University, Aligarh, India. She is the Research Scholar at Phytochemistry Division of CSIR-National Botanical Research Institute, Lucknow India. She has published two papers in reputed journals along with four popular articles.

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