Meenakshi Barua et al., Nat Prod Chem Res 2015, 3:6
http://dx.doi.org/10.4172/2329-6836.C1.007

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3rd International Conference and Exhibition on
Pharmacognosy, Phytochemistry & Natural Products
October 26-28, 2015 Hyderabad, India

Physico-chemical, pharmacognostical evaluation and cytotoxicity study of cassia angustifolia (vahl) leaves

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Cassia angustifolia Vahl (Family – Caesalpiniaceae) commonly known as 'Senna' is one of the medicinally important, drought-resistant small perennial shrub. It is used as a febrifuge in splenic enlargements, anemia, typhoid, cholera and is an excellent blood purifier. It is also a rich source of polyphenols, glycosides, flavonoids, steroids and anthracene derivatives. Study of phytochemical and pharmacological features of senna leaves is of keen interest due to its huge medicinal properties. In the present study, leaves of Cassia angustifolia (Vahl) were used for its Physico-chemical and Pharmacognostical evaluation. Futher Cytotoxicity bio-lethality assay was performed on leaves using two different extracts (aqueous and hydro-alcohol) to check its toxicity. In Physico-chemical parameters, total moisture content (0.87 + 0.02%), total ash (10.2 + 0.05%), acid insoluble ash (0.85 + 0.002%), water soluble ash (9.8 + 0.04 %), sulphated ash (11.46 + 0.004%), alcohol soluble (5.84 + 0.72%) and water soluble extractive value (17.28 + 0.01%) were studied. Heavy metal (mercury, arsenic, lead, chromium and cadmium) analysis was found to be less than 0.01ppm i.e. in permissible limit. Zinc, an essential micronutrient for human being, was also found in permissible limit (14.72ppm) in the leaves. In phytochemical screening, xanthoproteins,carbohydrates, tannins, alkaloids showed maximum presence in acetone, methonal and aqueous extracts. Total alkaloids (119mg/g) and flavonoids(160mg/g) were determined using standard methods. In Cyto-toxicity bioassay, mortality rate was found higher in aqueous extract (67%) than in the extract of hydro-alcohol (20%). Analysis of all these parameters may significantly help in its use for the formulation of new pharmaceutical drug.

Biography

Meenakshi Barua has completed her Graduation in Environmental Science from Delhi University (2007) and Mastered in Biotechnology from KIIT University, Bhubaneshwar (2010). During her post-graduation she completed her Dissertation in Environmental and Industrial Biotechnology Division at TERI, New Delhi (Jan – Jul 2010). She qualified GATE, (Biotechnology) in 2011. At present she is pursuing her PhD in Biotechnology from Birla College of Arts, Science and Commerce, Kalyan (University of Mumbai). She is a visiting faculty in the college in the subject of Biotechnology and presented papers (Oral and Posters) in national and international conferences.

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