SPECIMEN FORMAT FOR THESES OF MONTH

Faculty	**:**	Science
Department	**:**	Biochemistry, Biotechnology and Bioinformatics
Branch/ Area:	**:**	Biochemistry
Sub Subject Heading:	**:**	Cancer Biology
Candidate's Name	**:**	R. Amutha Priya
Candidate's Address with email	**:**	2/32, North Street, Uyyakondan Thirumalai, Trichy.
Title of the thesis	**:**	Evaluation of antioxidant and anticancer of *Cassia senna* L. using *in vitro* and *in vivo* methods
(i) In Roman Script		In Roman Script
(ii) In roman Script		-
Nomenclature of Degree:	**:**	Ph. D.
Month & Year of Enrolment:	**:**	September, 2011
Month & Year of Registration:	**:**	September, 2011
Month &Year of Submission:	**:**	September, 2016
Month &Year of Award	**:**	August, 2017
Name of Supervisor	**:**	Dr. B. Suganthi
Designation of Supervisor	**:**	Associate Professor
Centre/department/school in which research was conducted	**:**	Biochemistry, Biotechnology and Bioinformatics
University's Name & Address	**:**	Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore-43.

Abstract within 300 words:

Cancer is the second largest cause of death around the world. In spite of much progress in the treatment by cancer chemotherapy, there are several side effects. Hence it is Necessary to develop new anticancer agents with anticancer activity but without side effects. The medicinal plants which provide effective cure and less side effects are safe, cost effective and eco friendly. *Cassia* species have been of keen interest in pharmacological research due to their excellent medicinal values. With this background, the present study was designed to determine antioxidants and phytochemicals of *Cassia senna* and to evaluate anticancer activity of *C. senna* using *in vitro* and *in vivo* methods. Antioxidants and phytochemicals were determined in leaf and pod of *C. senna*. Effective extract was screened by free radical scavenging activity, chromatographical analyses and *in vitro* cytotoxicity assays, this was followed by the *in vivo* study and characterization of active principles. The research outcome of the present study revealed that Direct Ethanolic Extract (DEE) of *C. senna* leaves appear to be a good source of antioxidants and phytoconstituents. *In vitro* studies indicated a differential effect of DEE which was selectively more toxic to the cancer cells and less toxic to the non-cancerous cells, which may validate DEE as a successful anticancer source. From the *in vivo* studies, it could be stated that DEE exhibited significant antioxidant and anticancer activity in cancer induced mice. Based on the results of chromatographical and spectral analysis it can be deduced that DEE is a rich source of flavonoid and alkaloids which may be the active principles responsible for the antioxidant and anticancer potential of *Cassia senna*.

i) Major objectives :

To determine antioxidants and phytochemicals of *Cassia senna*

To evaluate anticancer activity of *C. senna* using *in vitro* and *in vivo* methods.

ii) Methodology :

Antioxidants and phytochemicals were determined in leaf and pod of *C. senna*.

Effective extract was screened by free radical scavenging activity, chromatographical analyses and *in vitro* cytotoxicity assays,

iii) Findings:

- The present study revealed that Direct Ethanolic Extract (DEE) of *C. senna* leaves appear to be a good source of antioxidants and phytoconstituents.

- *In vitro* studies indicated a differential effect of DEE which was selectively more toxic to the cancer cells and less toxic to the non-cancerous cells, which may validate DEE as a successful anticancer source.
- From the *in vivo* studies, it could be stated that DEE exhibited significant antioxidant and anticancer activity in cancer induced mice. Based on the results of chromatographical and spectral analysis it can be deduced that DEE is a rich source of flavonoid and alkaloids which may be the active principles responsible for the antioxidant and anticancer potential of *Cassia senna*.

Examiners

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