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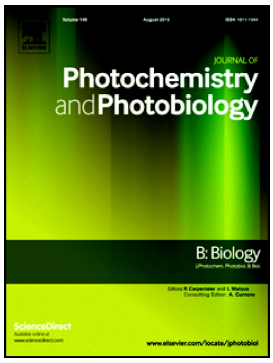

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Isolation of Quercetin from the methanolic extract of *Lagerstroemia speciosa* by HPLC technique, its cytotoxicity against MCF-7 cells and photocatalytic activity

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Abstract

The flavonoids present in the leaves of *Lagerstroemia speciosa* were extracted, characterized by spectral methods and studied for its cytotoxicity activity against MCF- cell lines and photocatalytic activity against azo dye. Direct and sequential soxhlet extraction was performed and its concentrated crude extract was subjected to high performance liquid chromatography. The yield obtained by the isolated compound (MEI- quercetin) from leaves of *L. speciosa* was found to be 1.8 g from the methanolic extract. The phytochemical analysis and the Rf value of the isolated flavonoid was found to be 3.59. The isolated compound was characterized by Infrared Spectroscopy, NMR and Mass. Based on the characterization, the structure was elucidated as Quercetin – a flavonoid. The isolated compound showed the significant in vitro cytotoxicity activity against MCF- 7 cell lines at 500 µg/ml when compared to the crude extract. Among the various concentrations (25, 50, 100, 250, and 500 µg/ml), at higher concentration the cell viability was pronounced and also compared with that of the control. It was first time to report that the isolated flavonoid showed photocatalytic against azo dye- methyl orange. The dye degradation was monitored by UV- Vis spectrophotometry. The isolated compound showed dye degradation of 91.66 % with the crude extract 82.47 % at 160 min. Hence in the present findings, the photocatalytic degradation of MO dye under UV irradiation was investigated over isolated compound of *L. speciosa*. Hence we expect that this can be used to treat the waste water in near future based on the photocatalytic technique.

Key words: Quercetin, *L. speciosa,* HPLC, MCF- 7 cell lines, photocatalytic activity.