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***In vitro* production, analysis and characterization of betalains from *Talinum triangulare* (Jacq.) wild: A valuable medicinal herb**

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Betalains are characteristic vacuolar pigments that entirely replace anthocyanin in most plants in the Centrospermae family. They can be divided into two structural groups, yellow-orange betaxanthins and red-purple betacyanins, both of which have betalamic acid as their basic structure. However, most of the betalain-containing crops have certain drawbacks which affect the global use as a natural food colourant. The Portulacaceae members belonging to the order Caryophyllales are characterized by the accumulation of Betalains in flowers, fruits and occasionally in vegetative tissues. *Talinum triangulare* (Family: Portulacaceae) popularly known as waterleaf naturally produces the nitrogen-containing plant pigment in flowers and stems. Hence, the aim of the present study was to produce and estimate Betalains by adapting *in vitro* tissue culture strategies from the medicinal herb *T. triangulare*. The betacyanin and betaxanthin patterns were detected, analyzed and characterized by applying high performance liquid chromatography photo-diode array detection (HPLC-PDA) coupled with positive ion electro-spray mass spectrometry. *In vitro* assays including antimicrobial efficacy, antioxidant activity and cytotoxicity were investigated to analyse the efficacy of the Betalains samples. Furthermore, the storage, stability and viability of the pigment were determined for its applications in food products. Altogether, the findings of our study may open new opportunities for screening of betalainic plants such as *T. triangulare* as promising future sources for natural food colours.

**Biography**

Swarna J completed her PhD degree in Plant Biology and Biotechnology (2015) from Loyola College (Autonomous) Chennai, India, under the University of Madras. Previously she has completed MSc Biotechnology and MPhil Plant Biology and Biotechnology from Stella Maris College and Loyola College, Chennai, India respectively. Her fields of interest and specialization include plant tissue culture and molecular biology. She has authored and published more than eight research papers in internationally well-reputed journals with high impact factor. She has also presented technical papers during national and international workshops and conferences.

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