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Estimation of phenolic and flavonoids content and antioxidant activity of *Garcinia talbotti* Raiz ex Sant

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Abstract
Phytochemical screening of crude extract of *Garcinia talbotti* was carried out with different solvents such as acetone, alcohol, ethanol, methanol and water. The total phenolic content, total flavonoid content and DPPH radical scavenging activity were determined in leaves of *Garcinia talbotti*. The total phenolic content was 2.609±0.130 % and the total flavonoid content was 5.043±0252 mg/100 gm in the methanolic extract of this plant. The DPPH radical scavenging activity in investigated sample was 73.51±3.68%.

Keywords: *Garcinia talbotti*, DPPH, total flavonoid content, total phenolic content

Introduction
Garcinia is a large genus of the family Clusiaceae, which represents more than 35 genera and over 800 species. *Garcinia* species are widely distributed throughout the tropical Asian and African countries and have tremendous potential as spice species and as medicinal plants. In India, about 36 species of *Garcinia* are reported and 7 species are endemic to the Western Ghats, 6 species recorded from Andaman and Nicobar Islands and 4 species are recovered from North-east India (Arora 1998). *Garcinia talbotii* Raiz. ex Sant. is locally called as Undal, Tavir, Phansada, Chivar. It is endemic to the Western Ghats. The fruits yield an inferior quality of yellow gutta-gum and dried fruits are used like tamarind in curries.
In the present study phytochemical screening of crude extract with different solvents such as acetone, alcohol, ethanol, methanol and water was carried out. The total phenolic content, total flavonoid content and the antioxidant activity was analyzed using DPPH free radical scavenging activity.

Material and method
Plant material
Fresh leaves of *Garcinia talbotti* were collected from Botanical Garden of Yashwantrao Chavan College of Science, Karad. The voucher specimen has been deposited at the Herbarium of Department of Botany, Yashwantrao Chavan College of Science, Karad.

Preparation of plant extract
The fresh leaves were washed thoroughly 2-3 times with running tap water and once with sterile distilled water. The plant leaves were air dried at room temperature and grind to a fine powder using a laboratory grinder. The powder was sieved using 20 mm mesh to obtain a uniform powder for the analysis. Powdered material was maintained at room temperature and protected from light until required for analysis. Extraction was achieved by adding 1 g of powdered material of Acetone, Alcohol, Ethanol, Methanol and distilled water. Then the extracts were filtered through filter paper (Whatman no. 1) and filtrate was kept at 4°C temperature for further analysis.

Preliminary phytochemical screening of the plant
The extract of different solvent used for preliminary phytochemical screening was carried out using standard procedures to test the presence of bioactive compounds described by Joshi *et al*., (2011) [3] with slight modification.

Determination of total phenol content
Total phenolic content of the extracts were quantified using Folin-Ciocalteu method described by Upadhya *et al*., (2013) [4] with some modification. The plant extracts (0.125 ml) with distilled water 0.5 ml was mixed with 0.125 ml Folin-Ciocalteu reagent and kept for 10 min for incubation at 37 ˚C to it 1.25 ml of 7 % sodium carbonate was added and kept for 90 min at room temperature. The absorbance was measured at 760 nm on UV-Visible spectrophotometer. Gallic acid (10–1000 mg/l) was used for calibration of a standard curve and the amount of total phenol was calculated as % dry powder as Gallic acid equivalents (GAE).

Determination of total flavonoid content
Total flavonoid content of all the plant extracts were quantified by using the aluminium chloride colorimetric method described by Deshmukh *et al*., (2009) [2]. The extracts (1 ml) were mixed with 1 ml 2 % aluminium chloride. The mixture was vortexed and the reaction was kept at the room temperature for 10 min in dark and absorbance of reaction mixture was measured at 367 nm using UV-Visible spectrophotometer. Quercitin (10–200 mg/l) was used for calibration of a standard and the amount of total flavonoid was calculated as mg/100g dry powder as Quercitin equivalents (QUE).