Antioxidant Activity of *Anogiessus latifolia*

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Summary

The different extracts of *Anogeissus latifolia* (combretaceae) were evaluated for 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity. Ascorbic acid was used as reference standard. The extracts exhibited strong antioxidant radical scavenging activity with IC50 value of 4.320 µg/ml, 4.062 µg/ml, 2.45 µg/ml and 2.69 µg/ml for acetone, alcohol extract, compound AL II and ascorbic acid respectively. The phytochemical screening suggests that phenolic and flavonoids present in these extracts of the leaves might provide considerable antioxidant activity.

Key words: *Anogeissus latifolia*; antioxidant activity; DPPH; different extracts; ascorbic acid; IC50 value

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Introduction

Anogeissus latifolia (Local name- Dhai, Family- Combretaceae) is a small to medium-sized tree up to 36 meters tall, which grows all over Chittagong division in Bangladesh. The bark has been reported to be useful in the treatment of skin diseases, snake and scorpion bite, stomach diseases, colic, cough and diarrhoea. The wound healing and free radical scavenging activities of the plant have also been documented. Previous phytochemical investigations with *A. latifolia* led to the isolation of (+) leucocyanidin, ellagic acid and glycosides of ellagic and flavellagic acids.

Materials and methods

Chemicals: 1, 1-diphenyl-2-picrylhydrazyl (DPPH) and ascorbic acid was purchased from Loba Chemie Pvt Ltd., Mumbai. All the chemicals and reagents used were of analytical grade.

Plant material: The leaf of *Anogiessus latifolia* were collected and authenticated by Regional Research Institute (Ay.), Bangalore.

Extraction procedure: Shade dried leaves were coarsely powdered and subjected to successive solvent extraction by a process of continuous extraction (soxhlation). The extraction was done with different solvents in their increasing order of polarity such as petroleum ether, benzene, chloroform, acetone, ethanol and water. Each time the marc was dried and later extracted with other solvents. All the extract were concentrated by distilling the solvent in a rotary vacuum evaporator and evaporated to dryness.

Anti oxidant activity of the extracts and the isolated compounds: Antioxidant activities of different extracts were tested by the DPPH method.

DPPH inhibition assay:

Preparation of Test and Standard solutions

The extracts and the standards, ascorbic acid 21 mg were separately dissolved in 5 ml of freshly distilled DMSO. These solutions were serially diluted with freshly distilled DMSO to obtain the lower dilutions.

Procedure

The assay was carried out in a 96 well microtitre plate. To 200 µl of DPPH solution, 10 µl of various concentrations of the extract or the standard solution was added separately in wells of the microtitre plate. The plates were incubated at 37 ºC for 30 min. Absorbance was measured at 517 nm using ELISA reader.

Results

% inhibiton of alcohol extract

S. No.	Name of the extract	Concentration Used (µg/ml)	% Inhibition	IC50 value (µg/ml)
1.		500	95.28	
2.		250	94.10	
3.		125	93.16	
4.		62.5	91.87	
5.		31.25	80.63	4.062
6.	alcoholic	15.6	76.60	

7.	extract	7.8	66.16	
8.		3.9	48.01	
9.		1.95	29.50	

% inhibiton acetone extract

S. No.	**Name of the extract**	**Concentration Used (µg/ml)**	**% Inhibition**	**IC50 value (µg/ml)**
1.		500	93.09	
2.		250	92.18	
3.		125	91.08	
4.	Acetone	62.5	81.18	
5.	extract	31.25	71.19	4.320
6.		15.6	65.23	
7.		7.8	61.11	
8.		3.9	45.13	
9.		1.95	23.18	

% inhibiton of isolated compound AL II

S. No.	**Name of the extract**	**Concentration Used (µg/ml)**	**% Inhibition**	**IC50 value (µg/ml)**
1.		500	97.21	
2.		250	95.16	
3.		125	94.11	
4.	Isolated	62.5	92.13	
5.	compound	31.25	91.08	2.45
6.	AL - II	15.6	85.95	
7.		7.8	70.19	
8.		3.9	59.13	
9.		1.95	31.12	

% inhibiton of standard extracts and isolated compound

S. No.	Name of extract	% Inhibition	IC50 value (µg/ml)
1.	Standard (Ascorbic acid)	97.13±12.64	2.69
2.	Methanolic extract	74.14±19.20	4.062
3.	Acetone extract	69.26±18.21	4.320
4.	Compound AL II	79.56±17.33	2.45

References

1. Mohammad SR, Mohammed ZR, Ahad Uddin ABM, Mohammad AR. Steroid and triterpenoid from *Anogiessus latifolia*. J Pharm Sci 2007; 6(1):47-50.
2. Chopra NR, Chopra IC, Handa KL, Kapoor LD. Anonymous, Pharmacogonosy of Indigenous drugs. Vol 1, Published by central council for research in Ayurveda and Siddha,New Delhi;1985.
3. Govindrajan R, Vijayakumar M, Singh M, Rao CV, Shitwaikar A, Rawat AKS, et al. Antioxidant potential of *Anogeissus latifolia*. Biol Pharm Bull 2004; 27(8):1266-9.
4. Govindrajan R, Vijayakumar M, Singh M, Rao CV, Shitwaikar A, Rawat AKS, et al. Activity guided isolation of antioxidant tannoid principles from *Anogeissus latifolia*. Natural Product Sciences 2005; 11(3):174-178.
5. Vani T, Rajani M, Sarkar S, Shishoo C. Anti-oxidant properties of the ayurvedic formulation Triphala and its constituents. Int. J. Pharmacog 1997; 35 (5): 313-7.