PHYTOCHEMICAL SCREENING AND ANTIOXIDANT ACTIVITY OF FRESH STEM OF PAEDERIA FOETIDA

MELUR ASMIDA BINTI MOHD HASSAN

BACHELOR OF SCIENCE (Hons.) CHEMISTRY FACULTY OF APPLIED SCIENCES UNIVERSITI TEKNOLOGI MARA

JULY 2019

TABLE OF CONTENTS

ACKNOWLEDGEMENTS TABLE OF CONTENTS LIST OF TABLES LIST OF FIGURES LIST OF ABBREVIATIONS ABSTRACT ABSTRAK		Page iii iv vi vii vii ix x
-	PTER 1 INTRODUCTION	1
1.1 1.2	Background of Study Problem Statement	1 2
1.2		3
1.4	Objective of study	3
	PTER 2 LITERATURE REVIEW	4
2.1	Medicinal plants	4
2.2	2.1.1 Medicinal plants in Malaysia Phytochemical compounds	4 7
2.2	2.2.1 Phenolics	8
	2.2.2 Flavonoids	9
2.3		10
2.4		11
	2.4.1 Soxhlet Extraction	11
	2.4.2 Decoction	11
	2.4.3 Maceration	12
2.5	Previous studies on <i>P.foetida</i>	12
	PTER 3 METHODOLOGY	16
	Materials	16
3.2	Extraction	17
3.3	Phytochemical Screening	17
	3.3.1 Test for saponin	17
	3.3.2 Test of glycosides3.3.3 Test for phenols	17 18
	3.3.4 Test for flavonoids	18
	3.3.5 Test for alkaloids	18
	3.3.6 Test for tannins	18
	3.3.7 Test for terpenoids	18
3.4	FTIR analysis	18
3.5	Total phenolic content	19

3.6	Total flavonoid content	19
3.7	DPPH assay	20
CHA	PTER 4 RESULTS AND DISCUSSION	22
4.1	Percentages yield	22
4.2	Phytochemical screening	23
4.3	Fourier Transform Infrared Spectrophotometer FTIR Analysis	27
4.4	Total phenolic content	29
4.5	Total flavonoids content	31
4.6	DPPH free radical scavenging activity	33
СНА	PTER 5 CONCLUSION AND RECOMMENDATIONS	38
5.1	Conclusion	38
5.2	Recommendations	38
REFERENCES		40
APPENDICES		48
CURRICULUM VITAE		61

LIST OF TABLES

Table	e Caption	
2.1	Phytochemical compounds and their biological functions.	8
4.1	Percentages yield of various extracts of fresh stem of <i>P</i> . <i>foetida</i>	22
4.2	Phytochemical screening of various extracts of fresh stem of <i>P. foetida</i>	23
4.3	Results of phytochemical screening of stem of P. foetida	26
4.4	Functional groups present in various extract of fresh stem of <i>P. foetida</i> .	28
4.5	The total phenolic content of various extract of fresh stem of <i>P. foetida</i> .	30
4.6	The total flavanoid content of various extract of fresh stem of <i>P. foetida</i>	32
4.7	IC ₅₀ value ascorbic acid and various extract of fresh stem of <i>P. foetida</i>	36

ABSTRACT

PHYTOCHEMICAL SCREENING AND ANTIOXIDANT ACTIVITY OF FRESH STEM OF *PAEDERIA FOETIDA*

This study is conducted to determine phytochemical constituent and antioxidant activity in various extracts of fresh stem of *P. foetida*. The extraction solvent used were ethanol, methanol and hexane. Antioxidant activity were quantified using total phenolic content, total flavonoids content and DPPH assay. Phytochemical screening confirmed the presence of saponin, phenolics, terpenoids, tannins, glycosides and alkaloids. Total phenolic contents were recorded at the range of 0.0111 mg GAE/g to 0.0399 mg GAE/g. The highest total flavonoid content was 0.0738 QE/g and lowest was 0.0172 QE/g for methanol and hexane extract respectively. Methanol showed highest antioxidant activity with IC₅₀ = 1.50 mg/mL compared to others. Thus, this study proved that *P. foetida* can be used as one of natural antioxidants.

Keywords: Antioxidant, Flavonoid, Paederia foetida, Phytochemical, Phenolic.