



TABLE OF CONTENTS

APPROVAL OF THESIS	ii
OFFERING	iii
STATEMENT	iv
FOREWORD	v
LIST OF ABBREVIATIONS	vii
TABLE OF CONTENTS	viii
LIST OF TABLES	x
LIST OF FIGURE	xi
LIST OF ATTACHMENT	xiv
INTRODUCTION	1
A. Background Research	1
B. Problem Statements	3
C. The Originality of Research	3
D. Urgency of Research	5
E. Research Objectives	6
LITERATURE REVIEW	7
A. Rambutan Plant	7
B. Characterization and Compositional of Rambutan Peel	9
C. Free Radicals, Antioxidant and Its Activity Evaluation	11
1. DPPH Radical Scavenging Assay	17
2. Antioxidant Activity Measurement Using ABTS Radical Assay	19
3. Ferric Reducing Activity Power	22
4. Metal Chelating Activity	23
D. Antioxidant Activities of Rambutan Peel	23
RESEARCH METHODOLOGY	27
A. Instrument and Apparatus	27
B. Materials	27



C. Methods.....	28
1. Determination of Rambutan.....	28
2. Preparation of Methanolic Extract of Rambutan Peel.....	28
3. Fractination of Methanolic Extract of Rambutan Peel.....	29
4. Antiradical Activity using DPPH.....	29
5. Antiradical Assay Using ABTS Radical	30
6. Determination of Ferric Reducing Power	30
7. Determination of Metal Chelating	31
8. Determination of Total Phenolic Content	31
9. Determination of Flavonoid Total.....	32
10. Qualitative Evaluation of the most Active Fraction as DPPH Radical Scavenging	32
11. Fractionation of the most Active Fraction	33
12. The Purity Test.....	33
13. The Identification of Isolate Using Spectroscopic Method.....	34
D. Data Analysis	34
RESULTS AND DISCUSSION	35
A. Plant Collection and Authentication	35
B. Preparation of Rambutan Peel Extract.....	35
C. Fractionation of Rambutan Aceh Peel Extract	36
D. Antioxidant Activities of Methanol Extract and its Fraction	38
1. Antiradical Assay using DPPH Radical.....	38
2. Antiradical Assay using ABTS Radical	43
3. Ferric Reducing Activity Power	47
4. Metal Chelating Activity.....	48
E. Determination of Phenolics Content.....	50
F. Determination of Flavonoid Contents	55
G. Isolation of Active Compounds in Ethyl Acetate Fraction.....	61
H. Identification of Ethyl Acetate Sub-Fraction Compound	63
CONCLUSIONS AND SUGGESTIONS.....	73



UNIVERSITAS
GADJAH MADA

**ANTIOXIDANT ACTIVITY OF RAMBUTAN (*Nephelium lappaceum L.*) PEEL AND ITS STRUCTURAL
ELUCIDATION OF
ACTIVE COMPOUND**

MISTRIYANI, Prof. Dr. Abdul Rohman, M.Si., Apt.; Prof. Dr. Sugeng Riyanto, M.S., Apt.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

A. CONCLUSIONS	73
B. SUGGESTION	74
REFERENCES.....	75
ATTACHMENT	81

LIST OF TABLES

Table 1. The antioxidant activity of methanol extract of rambutan peel cultivar Aceh and its fraction using FRAP assay	48
Table 2.The total phenolic content as indicated by % w/w equivalent of galic acid (%w/w EAG) of methanol extract of Rambutan peel and its fraction	52
Table 3.The flavonoid content of methanol extract of Rambutan peel and its fraction, expressed by % w/w rutin equivalent (% w/w RE)	57
Table 4. Data of HMBC spectrum	71