

TABLE OF CONTENT

SAMPUL DALAM	i
HALAMAN JUDUL	ii
HALAMAN PENGESAHAN	iii
HALAMAN PERNYATAAN	iv
KATA PENGANTAR	v
TABLE OF CONTENT	vi
LIST OF FIGURES	viii
LIST OF TABLES	ix
LIST OF APPENDIX	x
INTISARI	xi
ABTRACT	xii
I. INTRODUCTION	1
A. Background	1
B. Research problems	3
C. Aim of the study	3
D. Benefit of the study	3
II. LITERATURE REVIEW	4
A. Photoaging	4
B. Mammalian skin structure	6
C. Brown algae (<i>Sargassum</i> sp.)	7
D. Hypothesis	10
III. MATERIALS AND METHODS	11
A. Time and location of the study	11
B. Tools and materials	11
C. Method	11
IV. RESULTS AND DISCUSSIONS	15
A. Lipid content of <i>Sargassum</i> cf. <i>hystrix</i>	15
B. Epidermis thickness	18
C. Dermis thickness	20
D. Collagen fiber size	22
V. CONCLUSION	25



UNIVERSITAS
GADJAH MADA

Anti-photoaging Effect of Sargassum cf. hystrix Lipid Extract on The Histological Structure of Wistar Rats' Skin (*Rattus norvegicus*. Berkenhout, 1769)

YOVITA PERMATA BUDI, Zuliyati Rohmah, S.Si., M.Si., Ph.D.

Universitas Gadjah Mada, 2018 | Diunduh dari <http://etd.repository.ugm.ac.id/>

A. Conclusion.....	25
B. Suggestion	25
REFERENCES.....	26
APPENDIX	29

LIST OF FIGURES

Figure 1.	The path of photoaging.....	5
Figure 2.	Skin histology.....	6
Figure 3.	<i>Sargassum cf. hystrix</i>	8
Figure 4.	UVB irradiation scheme.....	13
Figure 5.	Rat skin histology with magnification of 4×10 with Leica.....	16
Figure 6.	Representatives photomicrograph of <i>Rattus norvegicus</i> epidermis after 2 weeks of treatment with <i>Sargassum cf. hystrix</i> lipid extract and UVB irradiation.....	19
Figure 7.	Representatives morphological picture of <i>Rattus norvegicus</i> skins plot after 2 weeks of treatment with <i>Sargassum cf. hystrix</i> lipid extract and UVB irradiation.	20
Figure 8.	Representatives photomicrograph of <i>Rattus norvegicus</i> skin dermis after 2 weeks of treatment with <i>Sargassum cf. hystrix</i> lipid extract and UVB irradiation.....	21
Figure 9.	Representatives photomicrograph of <i>Rattus norvegicus</i> collagen after 2 weeks of treatment with <i>Sargassum cf. hystrix</i> lipid extract and UVB irradiation.....	22

LIST OF TABLES

Table 1.	Treatment group.....	13
Table 2.	Compounds detected in <i>Sargassum cf. hystrix</i> lipid extract.....	17
Table 3.	Epidermis layer thickness after <i>Sargassum cf. hystrix</i> lipid extract topical application and UVB irradiation.....	18
Table 4.	Dermis layer thickness after <i>Sargassum cf. hystrix</i> lipid extract topical application and UVB irradiation.....	21
Table 5.	Collagen fibers size after <i>Sargassum cf. hystrix</i> lipid extract topical application and UVB irradiation.....	23
Table 6.	Collagen fibers diameter after <i>Sargassum cf. hystrix</i> lipid extract topical application and UVB irradiation.....	23

LIST OF APPENDIX

Appendix 1.	The process of <i>Sargassum cf. hystrix</i> sampling and lipid extraction.....	29
Appendix 2.	Calculation of the total phenolic content.....	30
Appendix 3.	Calculation of lipid extract dose in cream.....	31
Appendix 4.	Calculation of UVB irradiated wavelength.....	31
Appendix 5.	Animal treatment.....	32
Appendix 6.	The process of making histological preparations of rat skin.....	32
Appendix 7.	Image-j measurement result after 2 weeks of UVB irradiation.....	33
Appendix 8.	SPSS calculation result after 2 weeks of UVB irradiation.....	34
Appendix 9.	Ethical clearance.....	38