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LAMPIRAN 1

SKEMA KERJA

A. Penyiapan dan Ekstraksi Sampel

Rumput Laut

- Dicuci dengan air mengalir
- Dikeringkan dibawah suhu kamar
- Dihaluskan menggunakan blender

50 gr bubuk rumput laut

- Diektraksi dengan 1 L etanol dan distirrer selama 12 jam
- Setelahitudisentrifugasi 2000 rpm selama 10 menit, endapan dikeringkan

5 gr endapan

- Dicampur dalam 100 ml air suling lalu distirer selama 1 jam pada suhu 65℃
- disentrifugasi pada 15.000 rpm selama 10 menit

Supernatan

- Dicampur dengan $CaCl_2$ 1% lalu didiamkan semalam pada suhu 4 ◦C

B. Isolasi, Pemurnian, Hidrolisis dan Karakterisasi Struktur

Supernatan

- Lalu disentrifugasi pada 15.000 rpm selama 10 menit.
- Dicampur dengan etanol 99 % hingga konsentrasi akhir 30 %
- Disimpan semalam pada suhu 4ºC
- Lalu disentrifugasi 15.000 rpm selama 10 menit.

Supernatan

- Dicampur dengan etanol 99 % hingga konsentrasi akhir 70 %
- Disimpan semalam pada suhu 4ºC Lalu

Fukoidan

disaring dengan membran filter (ukuran 0.45 μm)

Pemurnian

- Pemurnian dengan HCl, NaOH, TFA dan Etanol 99%

Hidrolisis

- Hidrolisis dengan asam HCl dan TFA

Karakterisasi Struktur

- Menggunakan FTIR, HPLC dan NMR

LAMPIRAN 2

PERHITUNGAN PENGENCERAN

A. Pengenceran 99% ke 30%

N1.V1 = N2.V2

99%.V1 = 30%.200 mL

99V1 = 6.000 mL

V1 = 60,60 mL → etanol 99%

Vs = 200 mL – 60,60 mL = 139,4 mL → supernatan

$V_{30\%}$ = 60,60 mL + 139,4 mL

B. Pengenceran 99% dari 30% ke 70%

N1.V1 + N2.V2 = N3.V3

30%.200 mL + 99%.V2 = 70%.250 mL

6.000 mL + 99V2 = 17.500

99V2 = 17.500-6.000

99V2 = 11.500

V2 = 116,16 mL → (etanol 99%)

Vs = 250 mL – 116,16 mL = 133,84 mL → supernatan

$V_{70\%}$ = 116,16 mL + 133,84 mL

LAMPIRAN 3

GAMBAR PENELITIAN

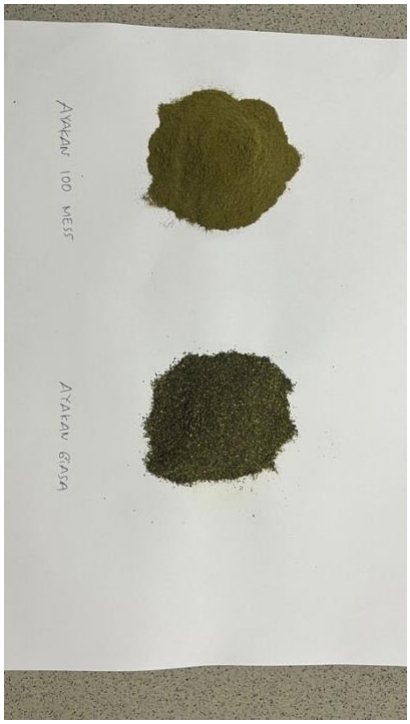
Gambar 8. Pengambilan Sampel

Gambar 9. Pencucian Sampel

Gambar 10. Pengeringan Sampel

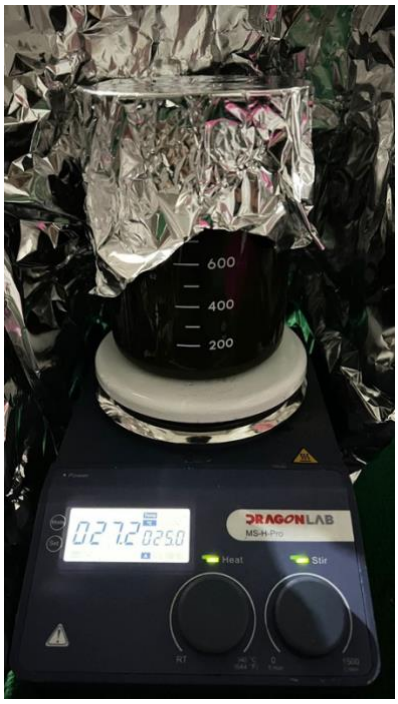
Gambar 11. Penghalusan Sampel

Gambar 12. Pengayakan Sampel

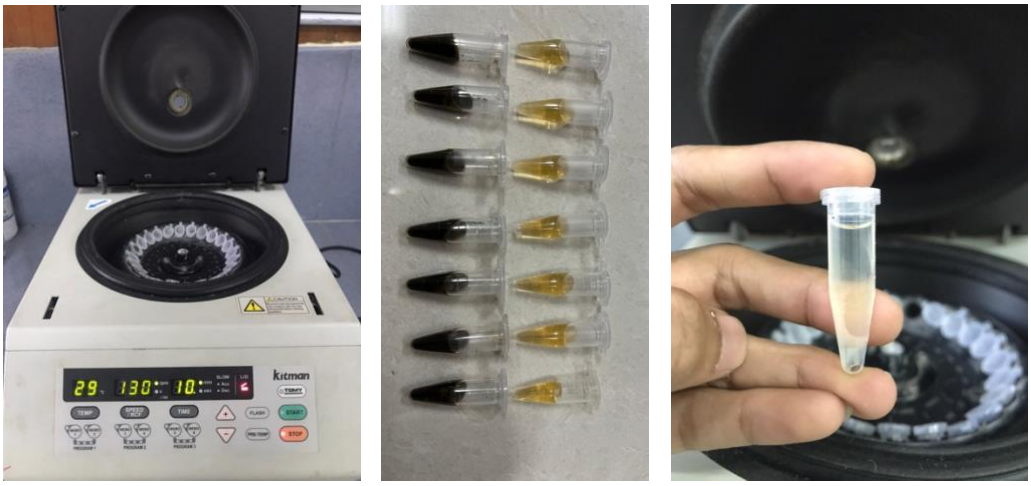


Gambar 13. Penimbangan Sampel

Gambar 14. Maserasi Alga Coklat

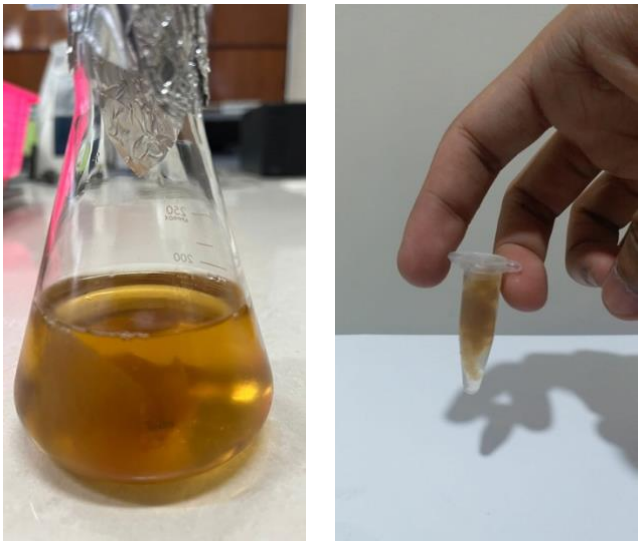


Gambar 15. Sentrifugasi Sampel

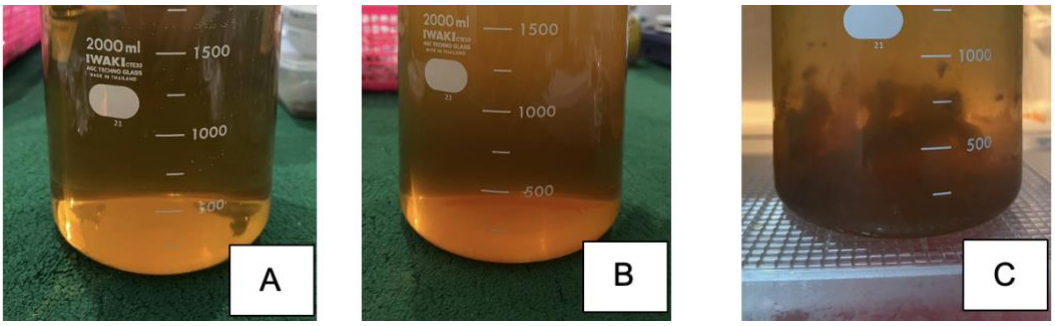


Gambar 16. Ekstraksi Panas

Gambar 17. Pemisahan Alginat



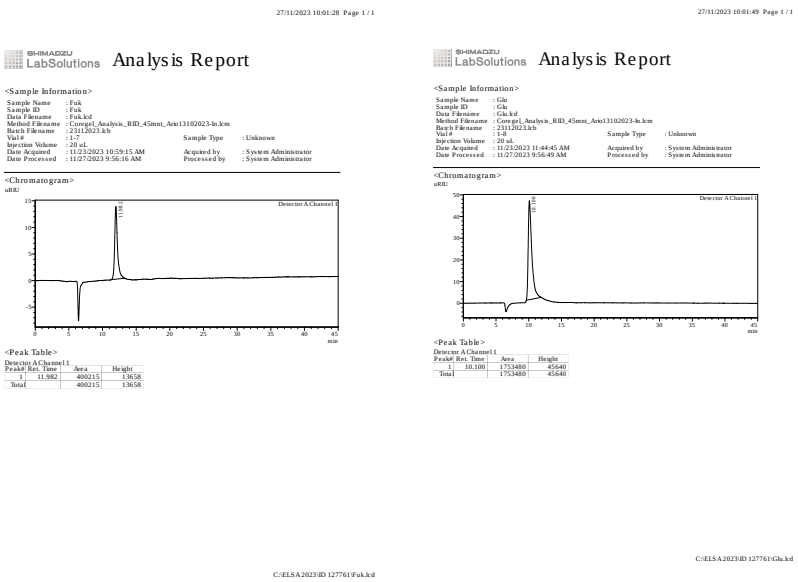
Gambar 18. Pengenceran bertingkat



Gambar 19. Hasil Pemurnian Fukoidan

Gambar 20. Hidrolisis Fukoidan

Gambar 21. Standar Monosakarida untuk HPLC



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SHIMADZU LabSolutions Analysis Report

<Sample Information>

Sample Name	: Fuk		
Sample ID	: Fuk		
Data Filename	: Fuk.lcd		
Method Filename	: Corrgel_Analysis_RID_45mnt_Ario13102023-ln.lcm		
Batch Filename	: 23112023.lcb		
Vial #	: 1-1	Sample Type	: Unknown
Injection Volume	: 20 uL		
Date Acquired	: 11/23/2023 10:59:15 AM	Acquired by	: System Administrator
Date Processed	: 11/27/2023 9:56:16 AM	Processed by	: System Administrator

<Chromatogram>

<Peak Table>

Detector A Channel 1

Peak#	Ret. Time	Area	Height
1	11.982	400215	13658
Total		400215	13658

C:\ELSA 2023\ID 127761\Fuk.lcd

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SHIMADZU LabSolutions Analysis Report

<Sample Information>

Sample Name	: Glu		
Sample ID	: Glu		
Data Filename	: Glu.lcd		
Method Filename	: Corrgel_Analysis_RID_45mnt_Ario13102023-ln.lcm		
Batch Filename	: 23112023.lcb		
Vial #	: 1-8	Sample Type	: Unknown
Injection Volume	: 20 uL		
Date Acquired	: 11/23/2023 11:44:45 AM	Acquired by	: System Administrator
Date Processed	: 11/27/2023 9:56:49 AM	Processed by	: System Administrator

<Chromatogram>

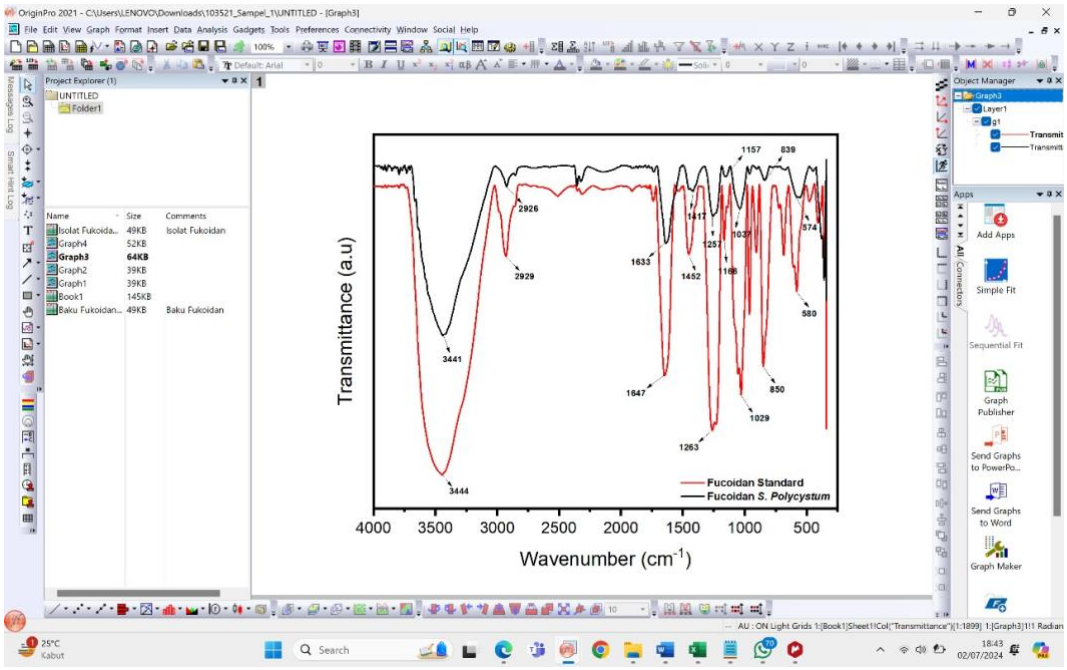
<Peak Table>

Detector A Channel 1

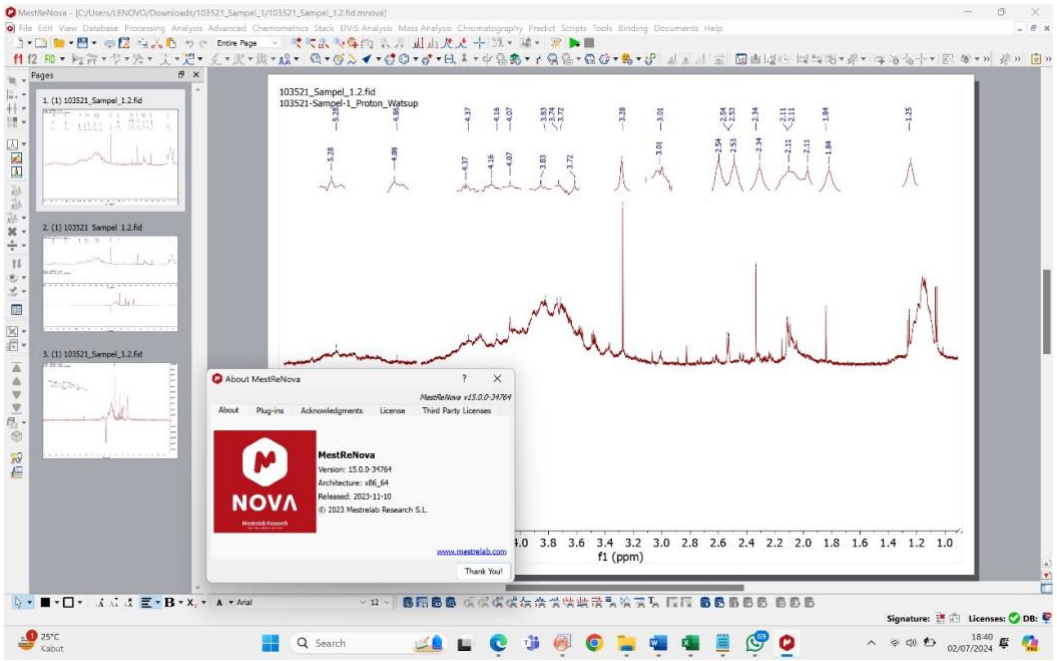
Peak#	Ret. Time	Area	Height
1	10.100	1753480	45640
Total		1753480	45640

C:\ELSA 2023\ID 127761\Glu.lcd

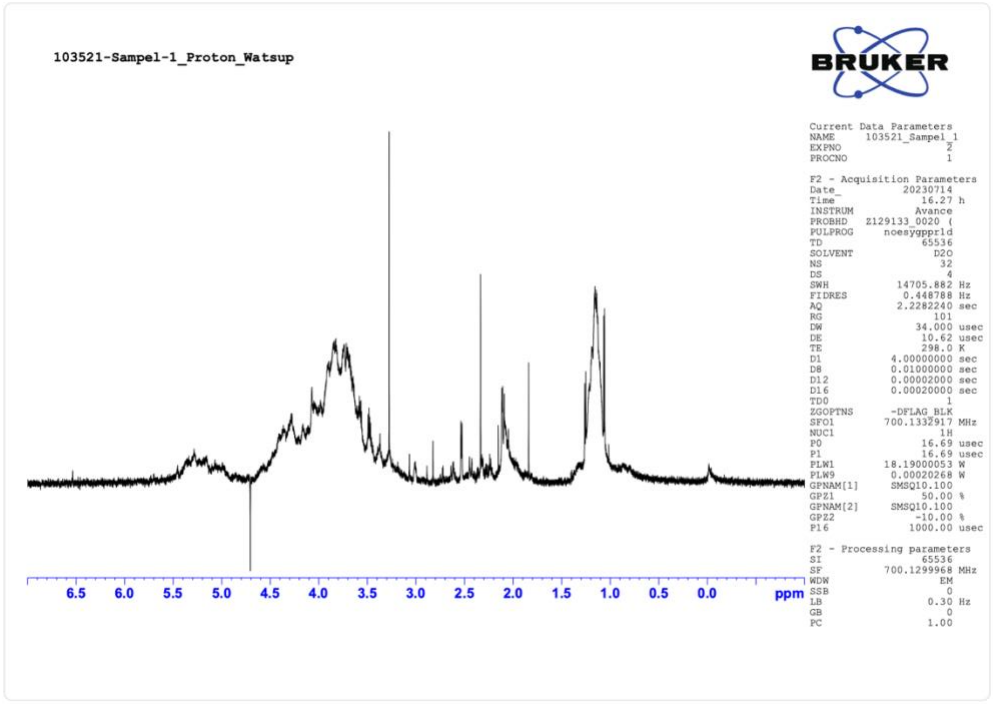
Gambar 22. Analisis Origin FTIR Senyawa Fukoidan



Gambar 23. Analisis Mestrenova ^{1}H-NMR Senyawa Fukoidan



Gambar 24. Data Mentah ^{1}H-NMR Senyawa Fukoidan



LAMPIRAN 4

SURAT KETERANGAN IDENTIFIKASI MORFOLOGI

LABORATORIUM ILMU LINGKUNGAN DAN KELAUTAN
DEPARTEMEN BIOLOGI
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN, KAMPUS TAMALANREA
JL. PERINTIS KEMERDEKAAN KM.10, MAKASSAR

No : 006/ILK.BIO/PP.13/01/2023
Hal : Identifikasi Algae
Lamp : 1 Lembar

SURAT KETERANGAN

Yang bertanda tangan dibawah ini, menerangkan bahwa setelah mengkaji karakter sampel ganggang algae dan identifikasi maka terdapat satu spesies yaitu :

Alga Coklat (Phaeophyta)

Sampel : Terima tanggal 13 Januari 2023
Kondisi sampel : Segar, terdapat holdfast

Jenis : *Sargassum polycystum* C. Agardh
Diskripsio : Berwarna coklat, melekat pada substrat keras. Stipula silindris, kaku, dapat tegak sepanjang thallus. Cabang utama kaku mengeluarkan cabang sekunder tumbuh selang-seling dan pada cabang ini terdapat daun, thallus silindris berduri-duri kecil merapat dan bercabang, daun berbentuk lembaran seperti daun bergelombang, tepi daun bergerigi tidak beraturan, dengan permukaan licin dan agak kaku, dari nudus terdapat bulatan-bulatan banyak menyerupai buah yang umumnya berkelompok. Batang pendek dengan percabangan utama tumbuh rimbun.

Makassar, 17 Januari 2023
Kepala Laboratorium ILK

Dr. Magdalena Litaay, M.Sc
NIP.19640929 198903 2 002

Tembusan :
1. Arsip