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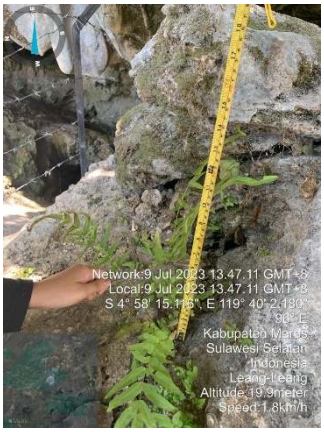
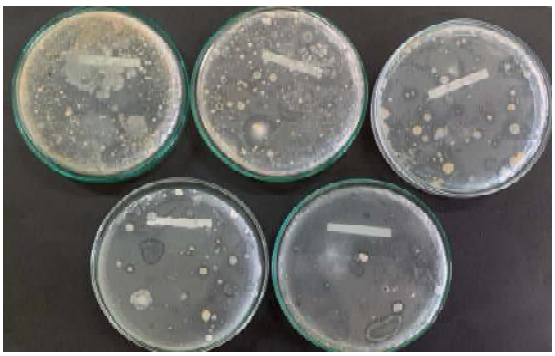
LAMPIRAN

1. Gambar Pengambilan Sampel



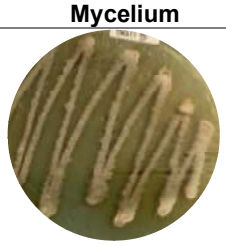
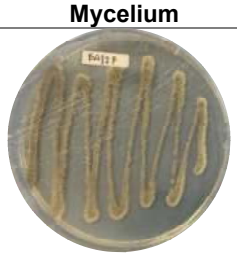
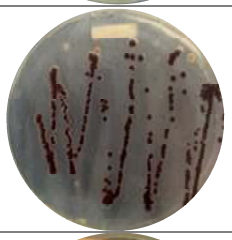
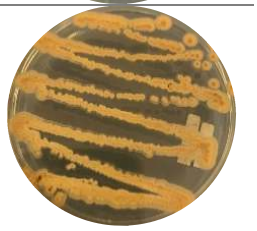
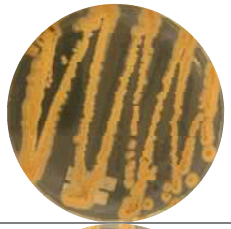
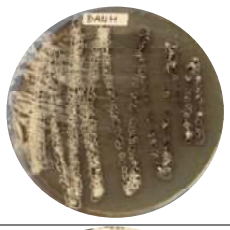
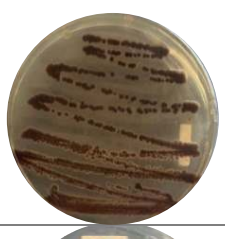
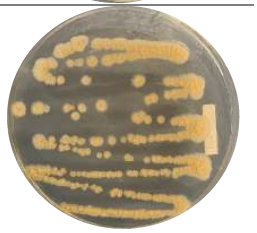
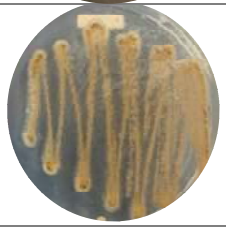
Pengambilan Sampel Rhizosfer *N cordifolia (L.) C.Presl* pada daerah Maros Sulawesi Selatan.

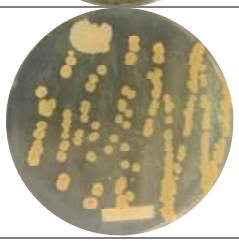
2. Isolasi *Actinomycetes*



Hasil dari isolasi **Rhizosfer *N cordifolia (L.) C.Presl***

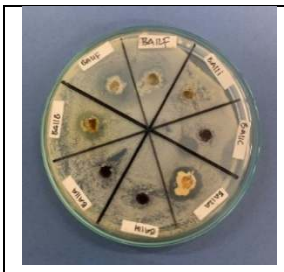
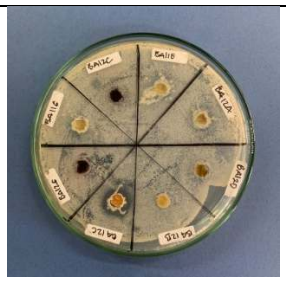
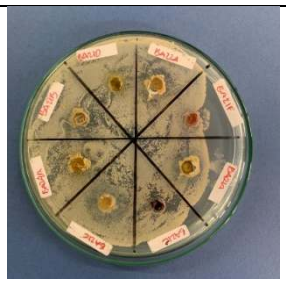
3. Hasil Dari Pemurnian *Actynomycetes*

Kode isolat	Ariel Mycelium	Substrater Mycelium	Kode isolat	Ariel Mycelium	Substrater Mycelium
RKP-A.1-2			RKP-A.2-6		
RKP-A.1-3			RKP-A.2-7		
RKP-A.1-5			RKP-B.1-1		
RKP-A.1.6			RKP-B.2-1		
RKP-A.1-7			RKP-B.2-2		
RKP-A.1-8			RKP-B.2-3		
RKP-A.1-9			RKP-B.2.4		

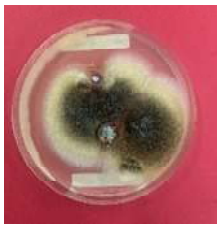
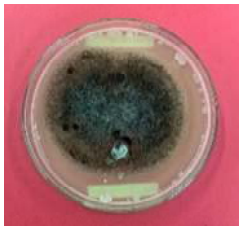
RKP-A.2-1			RKP-B.2-6	 
RKP-B.2-7				

4. **Gambar hasil uji antagonis**

   a. ***Candida albicans***

		
Hasil dari uji Antagonis pada jamur *Candida albicans,* media ISP Medium No.2, Kemudian *Actinomycetes* yang berumur 7 hari dipotong menggunakan *stainless steel cork borer* lalu ditempatkan pada cawan petri yang berisi mikroba uji, lalu diinkubasi selama 1 x 24 jam		

   b. ***Aspergilllus niger***

			
Hasil dari uji Antagonis pada jamur *Aspergilllus niger,* media ISP Medium No.2, Kemudian *Actinomycetes* yang berumur 7 hari dipotong menggunakan *stainless steel cork borer* lalu ditempatkan pada cawan petri yang berisi mikroba uji, lalu diinkubasi selama 1 x 24 jam			

5. **Fermentasi**

Fermentasi dilakukan dalam kondisi tershaker dengan kecepatan 150 rpm.

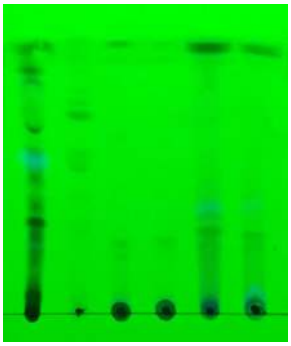
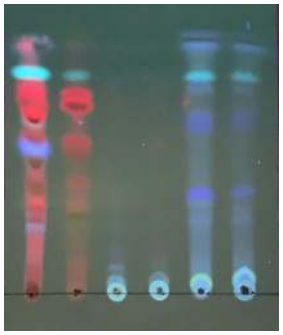
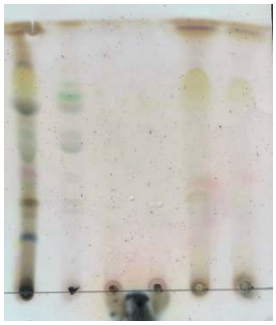
6. **Uji Aktivitas**

Hasil pengujian aktivitas jamur *Candida albicans*

7. Kromatografi Lapis Tipis

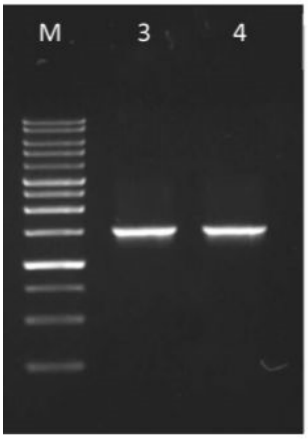
	
Maserasi tumbuhan paku dengan menggunakan pelarut etil asetat	Hasil dari maserasi yang telah disaring menjadi estrak

Hasil KLT

		
UV 366nm	UV 254 nm	H_2SO_4 10% Setelah dipanaskan

8. **Identifikasi Molekuler**

a. Elektroforesis Produk PCR

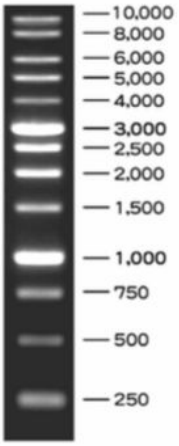


1 µL produk amplifikasi di visualisasi pada gel *agarose* 0.8% dalam *buffer* TBE

M, 1 kb DNA ladder (dalam 2,5 µL);

NTC : Kontrol Negatif Amplifikasi

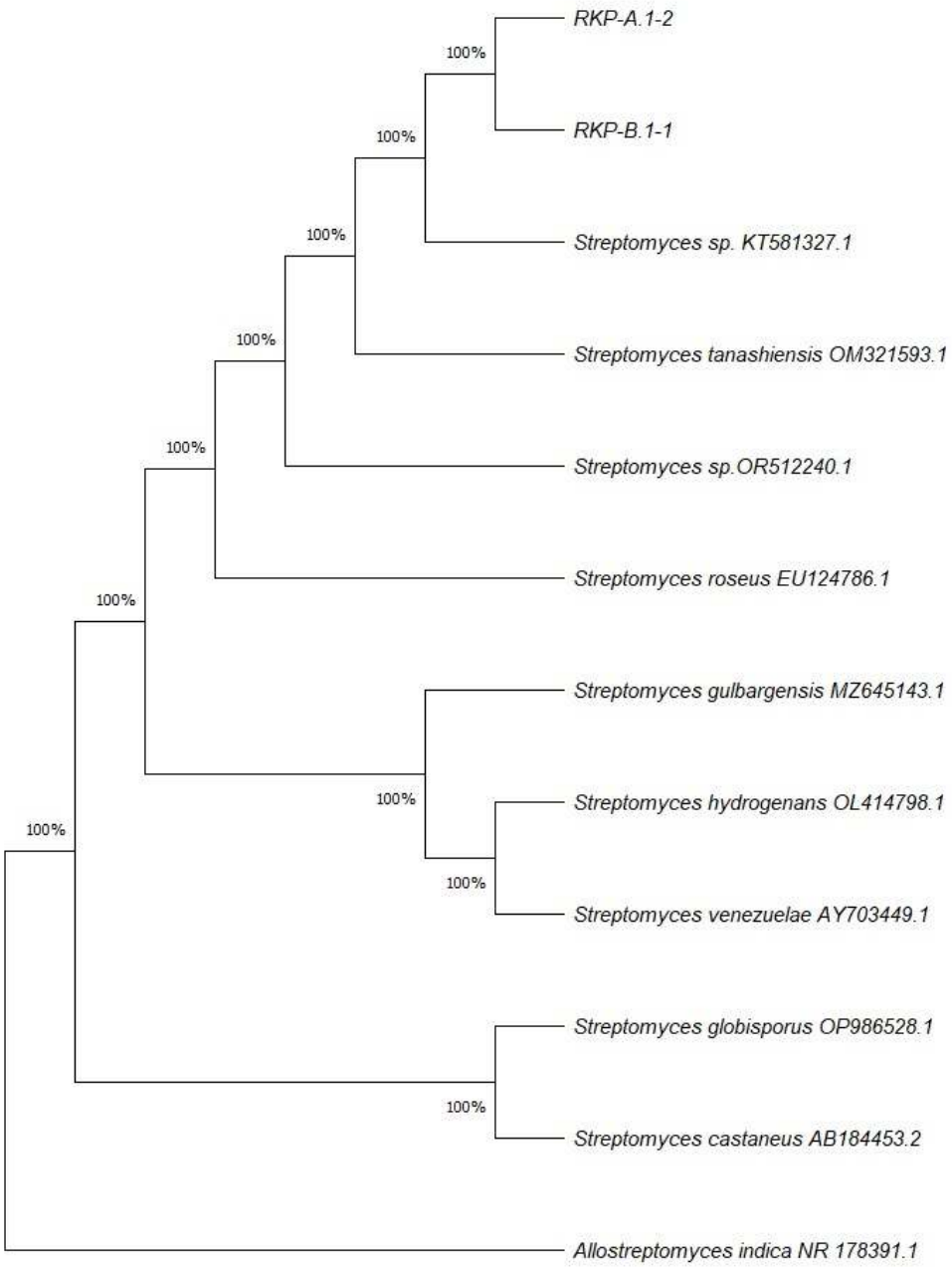
Kode sampel sesuai dengan nomor urut pada tabel Hasil Kuantifikasi DNA;



b. Hasil Sequensing – Produk Amplifikasi

NO	Kode Sampel	Sekuens
1	RKP-A.1-1	*Sequence Assembly* 1390bp 1 TGCAGTCGAA CGATGAAGCC CTTCGGGGTG GATTAGTGGC GAACGGGTGA GTAACACGTG 61 GGCAATCTGC CCTTCACTCT GGGACAAGCC CTGGAAACGG GGTCTAATAC CGGATACGAG 121 TCTGGGAGGC ATCTCCTGGA CTGGAAAGCT CCGGCGGTGA AGGATGAGCC CGCGGCCTAT 181 CAGCTTGTTG GTGGGGTAAT GGCCTACCAA GGCGACGACG GGTAGCCGGC CTGAGAGGGC 241 GACCGGCCAC ACTGGGACTG AGACACGGCC CAGACTCCTA CGGGAGGCAG CAGTGGGGAA 301 TATTGCACAA TGGGCGAAAG CCTGATGCAG CGACGCCGCG TGAGGGATGA CGGCCTTCGG 361 GTTGTAAACC TCTTTCAGCA GGGAAGAAGC GAAAGTGACG GTACCTGCAG AAGAAGCGCC 421 GGCTAACTAC GTGCCAGCAG CCGCGGTAAT ACGTAGGGCG CAAGCGTTGT CCGGAATTAT 481 TGGGCGTAAA GAGCTCGTAG GCGGCTTGTC ACGTCGGGTG TGAAAGCCCG GGGCTTAACC 541 CCGGGTCTGC ATCCGATACG GGCAGGCTAG AGTGTGGTAG GGGAGATCGG AATTCCTGGT 601 GTAGCGGTGA AATGCGCAGA TATCAGGAGG AACACCGGTG GCGAAGGCGG ATCTCTGGGC 661 CATTACTGAC GCTGAGGAGC GAAAGCGTGG GGAGCGAACA GGATTAGATA CCCTGGTAGT 721 CCACGCCGTA AACGTTGGGA ACTAGGTGTT GGCGACATTC CACGTCGTCG GTGCCGCAGC 781 TAACGCATTA AGTTCCCCGC CTGGGGAGTA CGGCCGCAAG GCTAAAACTC AAAGGAATTG 841 ACGGGGGCCC GCACAAGCAG CGGAGCATGT GGCTTAATTC GACGCAACGC GAAGAACCTT 901 ACCAAGGCTT GACATATACC GGAAAGCATT AGAGATAGTG CCCCCCTTGT GGTCGGTATA 961 CAGGTGGTGC ATGGCTGTCG TCAGCTCGTG TCGTGAGATG TTGGGTTAAG TCCCGCAACG 1021 AGCGCAACCC TTGTCCTGTG TTGCCAGCAT GCCCTTCGGG GTGATGGGGA CTCACAGGAG 1081 ACCGCCGGGG TCAACTCGGA GGAAGGTGGG GACGACGTCA AGTCATCATG CCCCTTATGT 1141 CTTGGGCTGC ACACGTGCTA CAATGGCCGG TACAAAGAGC TGCGATGCCG TGAGGCGGAG 1201 CGAATCTCAA AAAGCCGGTC TCAGTTCGGA TTGGGGTCTG CAACTCGACC CCATGAAGTC 1261 GGAGTTGCTA GTAATCGCAG ATCAGCATTG CTGCGGTGAA TACGTTCCCG GGCCTTGTAC 1321 ACACCGCCCG TCACGTCACG AAAGTCGGTA ACACCCGAAG CCGGTGGCCC AACCCCTTGT 1381 GGGAGGGAGC
2	RKP-B.1-1	*Sequence Assembly* 1383bp 1 GCAGTCGAAC GATGAAGCCC TTCGGGGTGG ATTAGTGGCG AACGGGTGAG TAACACGTGG 61 GCAATCTGCC CTTCACTCTG GGACAAGCCC TGGAAACGGG GTCTAATACC GGATACGAGT 121 CTGGGAGGCA TCTCCTGGAC TGGAAAGCTC CGGCGGTGAA GGATGAGCCC GCGGCCTATC 181 AGCTTGTTGG TGGGGTAATG GCCTACCAAG GCGACGACGG GTAGCCGGCC TGAGAGGGCG 241 ACCGGCCACA CTGGGACTGA GACACGGCCC AGACTCCTAC GGGAGGCAGC AGTGGGGAAT 301 ATTGCACAAT GGGCGAAAGC CTGATGCAGC GACGCCGCGT GAGGGATGAC GGCCTTCGGG 361 TTGTAAACCT CTTTCAGCAG GGAAGAAGCG AAAGTGACGG TACCTGCAGA AGAAGCGCCG 421 GCTAACTACG TGCCAGCAGC CGCGGTAATA CGTAGGGCGC AAGCGTTGTC CGGAATTATT 481 GGGCGTAAAG AGCTCGTAGG CGGCTTGTCA CGTCGGGTGT GAAAGCCCGG GGCTTAACCC 541 CGGGTCTGCA TCCGATACGG GCAGGCTAGA GTGTGGTAGG GGAGATCGGA ATTCCTGGTG 501 TAGCGGTGAA ATGCGCAGAT ATCAGGAGGA ACACCGGTGG CGAAGGCGGA TCTCTGGGCC 561 ATTACTGACG CTGAGGAGCG AAAGCGTGGG GAGCGAACAG GATTAGATAC CCTGGTAGTC 721 CACGCCGTAA ACGTTGGGAA CTAGGTGTTG GCGACATTCC ACGTCGTCGG TGCCGCAGCT 781 AACGCATTAA GTTCCCCGCC TGGGGAGTAC GGCCGCAAGG CTAAAACTCA AAGGAATTGA 341 CGGGGGCCCG CACAAGCAGC GGAGCATGTG GCTTAATTCG ACGCAACGCG AAGAACCTTA 901 CCAAGGCTTG ACATATACCG GAAAGCATTA GAGATAGTGC CCCCCTTGTG GTCGGTATAC 961 AGGTGGTGCA TGGCTGTCGT CAGCTCGTGT CGTGAGATGT TGGGTTAAGT CCCGCAACGA 1021 GCGCAACCCT TGTCCTGTGT TGCCAGCATG CCCTTCGGGG TGATGGGGAC TCACAGGAGA 1081 CCGCCGGGGT CAACTCGGAG GAAGGTGGGG ACGACGTCAA GTCATCATGC CCCTTATGTC 1141 TTGGGCTGCA CACGTGCTAC AATGGCCGGT ACAAAGAGCT GCGATGCCGT GAGGCGGAGC 1201 GAATCTCAAA AAGCCGGTCT CAGTTCGGAT TGGGGTCTGC AACTCGACCC CATGAAGTCG 1261 GAGTTGCTAG TAATCGCAGA TCAGCATTGC TGCGGTGAAT ACGTTCCCGG GCCTTGTACA 1321 CACCGCCCGT CACGTCACGA AAGTCGGTAA CACCCGAAGC CGGTGGCCCA ACCCCTTGTG 1381 GGA

Pohon Filogenik



C. Hasil *Top 10 Hit BLAST* terhadap NCBI, *Excluding Uncultured*

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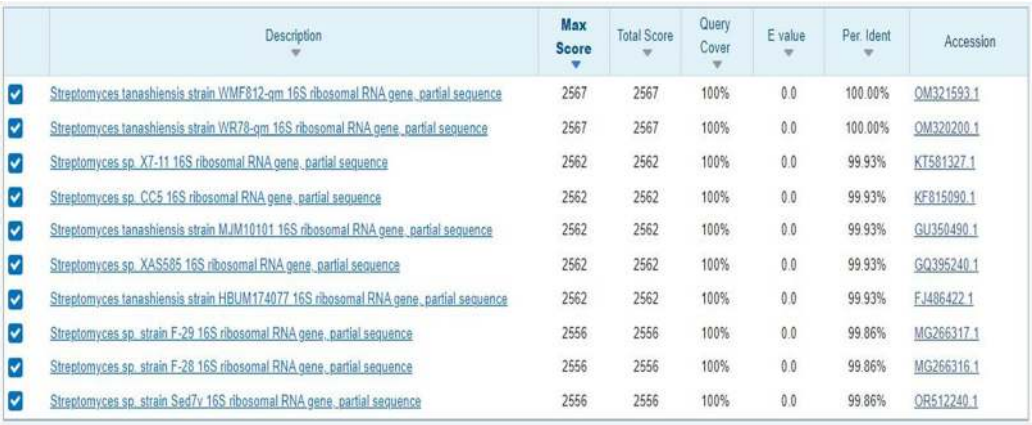
RKP-A.1-2</td><td>Sample Sequences
 
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<tr><th></th><th>Description</th><th>Max Score</th><th>Total Score</th><th>Query Cover</th><th>E value</th><th>Per. Ident</th><th>Accession</th></tr>
<tr><td></td><td>Streptomyces tanashiensis strain WMF812-qm 16S ribosomal RNA gene, partial sequence</td><td>2567</td><td>2567</td><td>100%</td><td>0.0</td><td>100.00%</td><td>OM321593.1</td></tr>
<tr><td></td><td>Streptomyces tanashiensis strain WR78-qm 16S ribosomal RNA gene, partial sequence</td><td>2567</td><td>2567</td><td>100%</td><td>0.0</td><td>100.00%</td><td>OM320200.1</td></tr>
<tr><td></td><td>Streptomyces sp. X7-11 16S ribosomal RNA gene, partial sequence</td><td>2562</td><td>2562</td><td>100%</td><td>0.0</td><td>99.93%</td><td>KT581327.1</td></tr>
<tr><td></td><td>Streptomyces sp. CC5 16S ribosomal RNA gene, partial sequence</td><td>2562</td><td>2562</td><td>100%</td><td>0.0</td><td>99.93%</td><td>KF815090.1</td></tr>
<tr><td></td><td>Streptomyces tanashiensis strain MJM10101 16S ribosomal RNA gene, partial sequence</td><td>2562</td><td>2562</td><td>100%</td><td>0.0</td><td>99.93%</td><td>GU350490.1</td></tr>
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<tr><td></td><td>Streptomyces sp. strain F-29 16S ribosomal RNA gene, partial sequence</td><td>2556</td><td>2556</td><td>100%</td><td>0.0</td><td>99.86%</td><td>MG266317.1</td></tr>
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 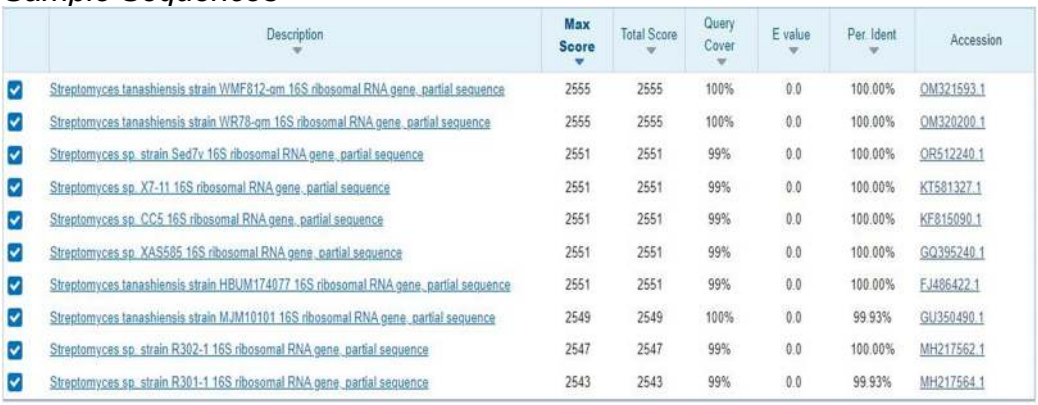
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9. Hasil Determinasi Tanaman

LABORATORIUM BOTANI DEPARTEMEN BIOLOGI
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN, KAMPUS TAMALANREA
JL. PERINTIS KEMERDEKAAN KM. 10 TLP. (0411) 585466, Fax: 620411 MAKASSAR 90915

Nomor : 061/UN4.11.9/BIO-BOT/PL-03/2024
Lampiran : -
Hal : **Hasil Identifikasi dan Determinasi Tanaman**

Kepada Yth,
Maulidiah Alda Sami
Di-
Tempat

Dengan hormat,

Bersama ini, kami sampaikan hasil identifikasi dan determinasi tanaman *Nephrolepis cordifolia* (L.) C. Presl. yang saudara (i) kirimkan. Identifikasi dilakukan oleh staf peneliti Laboratorium Botani Departemen Biologi FMIPA Unhas dengan hasil sebagai berikut:

Regnum : Plantae
Divisio : Pteridophyta
Classis : Filicinae
Sub Classis : Leptosporangiatae (Filices)
Ordo : Polypodiales
Familia : Polypodiaceae
Genus : *Nephrolepis*
Species : *Nephrolepis cordifolia* (L.) C. Presl.
Sinonim : *Aspidium cordifolium* (L.) Sw., *Polypodium cordifolium* L.
Nama Lokal : Paku sepat, Pakis kelabang (Indonesia), Narrow swordfern (Inggris)

Kunci Determinasi:
1a-(Golongan 1. Paku dan paku-pakuan)
17b-18b-19b-22b-23b-24b-25b-26b-(Fam 11. Polypodiaceae)
1b-5b-10a-11a- (9. *Nephrolepis*)
1a- (*Nephrolepis cordifolia*)

Buku Acuan:
1. Gembong Tjitrosoepomo. 2011. Taksonomi Tumbuhan (Schizophyta, Thallophyta, Bryophyta, Pteridophyta).
2. Dr. c. g. g. j. Van Steenis, dkk. 2013. FLORA.
3. Nephrolepis cordifolia (L.) C.Presl | Plants of the World Online | Kew Science

Demikian hasil identifikasi kami untuk diketahui dan dipergunakan sebagaimana mestinya.

Makassar, 28 Juni 2024

Kepala Laboratorium

Dr. Andi Ilham Latunra, M.Si
NIP 19670207 199103 1 001