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LAMPIRAN

Lampiran 1. Environmental DNA Sampling Shee

Environmental DNA Sampling Sheet
TAKE PICTURE OF THIS SHEET after each recording, just in case you lose it

Sampling personal (names of all the sampling team members): SALDI RADHYANIGAM

Date: (YYYY-MM-DD) 2016-02-01 (Time) 09:01 am Weather: bright

Locality: Hutan Mangrove Lantehung

Latitude: (N or S) _____ Longitude: (E or W) _____ (e.g. 35.301252 N)

Description of the Sampling point (choose from the options below or write it):
River - Estuarine - Lake* - Marsh - Beach - Coral Reef - Other ()

Tree/Plant Species (if any): Mangrove Tree height: 3 - 9 m

Soil Type: Rocky - Sandy - Pebble - Muddy - Other ()

Tide (Choose from the right): Flood tide - Falling tide - High tide - Low tide

Flow Velocity (Choose from the right): Very fast - Fast - Slow

Water Temperature: _____ °C (including 1st decimal point) Wave Height: _____

Salinity: _____ ‰ (including 1st decimal point, not ‰₀₀ nor ‰0) ← Salinometer Serial No.: _____

BAC (Benzalkonium Chloride): Used or Not

Took photographs of sampling sites: Yes or No (Please don't forget taking photos!)

Filtered water volume:

Sterivex #1: 650 ml mL (up to the defined volume, 3000ml)

Sterivex #2: 650 ml mL (up to the defined volume, 3000ml)

Sterivex NC: _____ mL (up to the defined volume, 3000ml, of filtered water)
(Negative Control)

Sampling Label #1 <u>D1 (1) (1)</u> *Match with the label on Sterivex.
Sampling Label #2 <u>D2 (1) (2)</u> *Match with the label on Sterivex.
Sampling Label NC *Match with the label on Sterivex.

Additional Notes:
*Please specify the lake type: Lake / Lagoon / Pond

Lampiran 2. Sample Arrival Report

No. : SAR-OBI-II23-003.0

Name : Saldi Radiansyah

Date : Monday, 06 February 2023

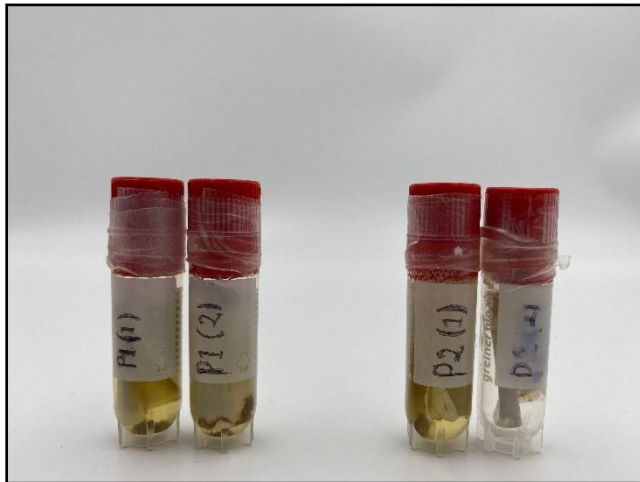
Email : radiansahs19m@student.unhas.ac.id

Sample type : Filtered mangrove water sample (eDNA Sample)

Institution : Universitas Hasanuddin

No	Sample ID	Targeted Organism	Notes
1	P1 (1,2)	Marine Fishes and Microorganism	-
2	P2 (1,2)	Marine Fishes and Microorganism	Sample P2 (2) tidak terdapat cairan

Appendix 1

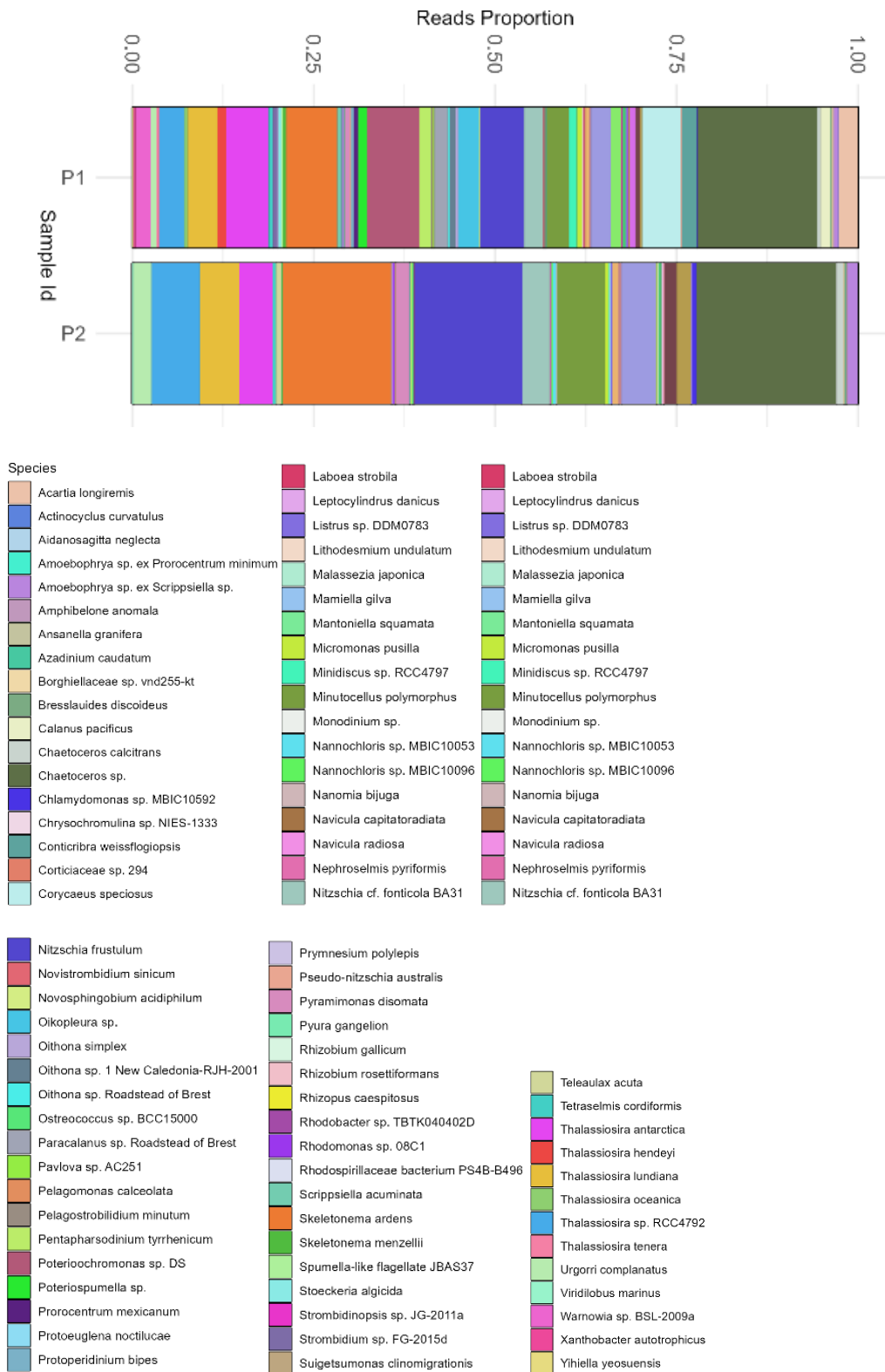


Sample P1 (1,2) dan P2 (1,2)



Sample P2 (2)

Lampiran 3. Kelimpahan spesies



Lampiran 4. Daftar taksa yang berhasil diidentifikasi dari semua sampel. Hasil taksa yang didapatkan dengan kecocokan 97% dengan database yaitu : filum (9), class (29), order (49), family (65), genus (81), dan spesies (103)



Phyllum	Class	Order	Family	Genus	Species
Arthropoda	Maxillopoda	Calanoida	Acartiidae	<i>Acartia</i>	<i>Acartia longiremis</i>
Bacillariophyta	Coscinodiscophyceae	Coscinodiscales	Hemidiscaceae	<i>Actinocyclus</i>	<i>Actinocyclus curvatulus</i>
Chaetognatha	Sagittoidea	Aphragmophora	Sagittidae	<i>Aidanosagitta</i>	<i>Aidanosagitta neglecta</i>
NA	Dinophyceae	Syndiniales	Amoebophryaceae	<i>Amoebophrya</i>	<i>Amoebophrya sp. ex Prorocentrum minimum</i>
NA	Dinophyceae	Syndiniales	Amoebophryaceae	<i>Amoebophrya</i>	<i>Amoebophrya sp. ex Scripsiella sp.</i>
NA	Acantharea	Symphyacanthida	Amphilitiidae	<i>Amphibelone</i>	<i>Amphibelone anomala</i>
NA	Dinophyceae	Suessiales	Suessiaceae	<i>Ansanella</i>	<i>Ansanella granifera</i>
NA	Dinophyceae	Gonyaulacales	Amphidomataceae	<i>Azadinium</i>	<i>Azadinium caudatum</i>
NA	Dinophyceae	Suessiales	Borghiellaceae	NA	<i>Borghiellaceae sp. vnd255-kt</i>
NA	Colpodea	Colpodida	Hausmanniellidae	<i>Bresslauides</i>	<i>Bresslauides discoideus</i>
Arthropoda	Maxillopoda	Calanoida	Calanidae	<i>Calanus</i>	<i>Calanus pacificus</i>
Bacillariophyta	Coscinodiscophyceae	Chaetocerotales	Chaetocerotaceae	<i>Chaetoceros</i>	<i>Chaetoceros calcitrans</i>
Bacillariophyta	Coscinodiscophyceae	Chaetocerotales	Chaetocerotaceae	<i>Chaetoceros</i>	<i>Chaetoceros sp.</i>
Chlorophyta	Chlorophyceae	Chlamydomonadales	Chlamydomonadaceae	<i>Chlamydomonas</i>	<i>Chlamydomonas sp. MBIC10592</i>
NA	NA	Prymnesiales	Chrysochromulinaceae	<i>Chrysochromulina</i>	<i>Chrysochromulina sp. NIES-1333</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Conticribra</i>	<i>Conticribra weissflogiopsis</i>
Basidiomycota	Agaricomycetes	Corticiales	Corticaceae	NA	<i>Corticaceae sp. 294</i>
Arthropoda	Maxillopoda	Poecilostomatoida	Corycaeidae	<i>Corycaeus</i>	<i>Corycaeus speciosus</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Stephanodiscaceae	<i>Cyclotella</i>	<i>Cyclotella choctawhatcheeana</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Stephanodiscaceae	<i>Cyclotella</i>	<i>Cyclotella choctawhatcheeana</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Stephanodiscaceae	<i>Cyclotella</i>	<i>Cyclotella striata</i>
NA	Dinophyceae	NA	NA	NA	<i>Dinophyceae sp. CCMP1878</i>
NA	Dinophyceae	NA	NA	NA	<i>Dinophyta sp. HG204</i>
NA	Spirotrichea	Euplotida	Uronychiidae	<i>Diophrys</i>	<i>Diophrys appendiculata</i>




NA	NA	Isochrysidales	Noelaerhabdaceae	<i>Emiliana</i>	<i>Emiliana huxleyi</i>
NA	Dinophyceae	Syndiniales	Eudubosquellidae	<i>Euduboscquella</i>	<i>Euduboscquella sp. ex Tintinnopsis cf. subacuta</i>
Arthropoda	Maxillopoda	Harpacticoida	Euterpinidae	<i>Euterpina</i>	<i>Euterpina acutifrons</i>
NA	Cryptophyta	Pyrenomonadales	Geminigeraceae	<i>Guillardia</i>	<i>Guillardia theta</i>
NA	Dinophyceae	Gymnodiniales	Gymnodiniaceae	<i>Gymnodinium</i>	<i>Gymnodinium aureolum</i>
NA	Dinophyceae	Gymnodiniales	Gymnodiniaceae	<i>Gymnodinium</i>	<i>Gymnodinium sp. GSSW10</i>
NA	Dinophyceae	Gymnodiniales	Gymnodiniaceae	<i>Gyrodiniellum</i>	<i>Gyrodiniellum shiwhaense</i>
NA	Dinophyceae	Gymnodiniales	Gymnodiniaceae	<i>Gyrodinium</i>	<i>Gyrodinium sp. HJ-2011</i>
NA	Cryptophyta	Cryptomonadales	Hemiselmidae	<i>Hemiselmis</i>	<i>Hemiselmis sp. UTEX 2000</i>
NA	Cryptophyta	Cryptomonadales	Hemiselmidae	<i>Hemiselmis</i>	<i>Hemiselmis virescens</i>
NA	Dinophyceae	Peridinales	Heterocapsaceae	<i>Heterocapsa</i>	<i>Heterocapsa rotundata</i>
NA	Raphidophyceae	Chattonellales	Chattonellaceae	<i>Heterosigma</i>	<i>Heterosigma akashiwo</i>
NA	Dinophyceae	Peridinales	Protoperidiniaceae	<i>Islandinium</i>	<i>Islandinium tricingulatum</i>
NA	Spirotrichea	NA	Strombidiidae	<i>Laboea</i>	<i>Laboea strobila</i>
Bacillariophyta	Coscinodiscophyceae	Leptocylindrales	Leptocylindraceae	<i>Leptocylindrus</i>	<i>Leptocylindrus danicus</i>
Arthropoda	Insecta	Coleoptera	Melyridae	<i>Listrus</i>	<i>Listrus sp. DDM0783</i>
Bacillariophyta	Mediophyceae	Lithodesmiales	Lithodesmiaceae	<i>Lithodesmium</i>	<i>Lithodesmium undulatum</i>
Basidiomycota	Malasseziomycetes	Malasseziales	Malasseziaceae	<i>Malassezia</i>	<i>Malassezia japonica</i>
Chlorophyta	Mamiellophyceae	Mamiellales	Mamiellaceae	<i>Mamiella</i>	<i>Mamiella gilva</i>
Chlorophyta	Mamiellophyceae	Mamiellales	Mamiellaceae	<i>Mantoniella</i>	<i>Mantoniella squamata</i>
Chlorophyta	Mamiellophyceae	Mamiellales	Mamiellaceae	<i>Micromonas</i>	<i>Micromonas pusilla</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Minidiscus</i>	<i>Minidiscus sp. RCC4797</i>
Bacillariophyta	Mediophyceae	Cymatosirales	Cymatosiraceae	<i>Minutocellus</i>	<i>Minutocellus polymorphus</i>
NA	Litostomatea	Haptorida	Didiniidae	<i>Monodinium</i>	<i>Monodinium sp.</i>
Chlorophyta	Trebouxiophyceae	Chlorellales	Chlorellaceae	<i>Nannochloris</i>	<i>Nannochloris sp. MBIC10053</i>
Chlorophyta	Trebouxiophyceae	Chlorellales	Chlorellaceae	<i>Nannochloris</i>	<i>Nannochloris sp. MBIC10096</i>
Cnidaria	Hydrozoa	Siphonophorae	Agalmatidae	<i>Nanomia</i>	<i>Nanomia bijuga</i>
Bacillariophyta	Bacillariophyceae	Naviculales	Naviculaceae	<i>Navicula</i>	<i>Navicula capitatoradiata</i>
Bacillariophyta	Bacillariophyceae	Naviculales	Naviculaceae	<i>Navicula</i>	<i>Navicula radiosa</i>

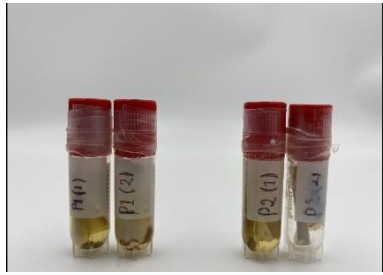

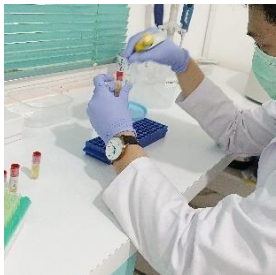
Chlorophyta	Nephroselmidophyceae	NA	NA	<i>Nephroselmis</i>	<i>Nephroselmis pyriformis</i>
Bacillariophyta	Bacillariophyceae	Bacillariales	Bacillariaceae	<i>Nitzschia</i>	<i>Nitzschia cf. fonticola BA31</i>
Bacillariophyta	Bacillariophyceae	Bacillariales	Bacillariaceae	<i>Nitzschia</i>	<i>Nitzschia frustulum</i>
NA	Spirotrichea	NA	Strombidiidae	<i>Novistrombidium</i>	<i>Novistrombidium sinicum</i>
Proteobacteria	Alphaproteobacteria	Sphingomonadales	Sphingomonadaceae	<i>Novosphingobium</i>	<i>Novosphingobium acidiphilum</i>
Chordata	Appendicularia	NA	Oikopleuridae	<i>Oikopleura</i>	<i>Oikopleura sp.</i>
Chordata	Appendicularia	NA	Oikopleuridae	<i>Oikopleura</i>	<i>Oikopleura sp.</i>
Arthropoda	Maxillopoda	Cyclopoida	Oithonidae	<i>Oithona</i>	<i>Oithona simplex</i>
Arthropoda	Maxillopoda	Cyclopoida	Oithonidae	<i>Oithona</i>	<i>Oithona sp. 1 New Caledonia-RJH-2001</i>
Arthropoda	Maxillopoda	Cyclopoida	Oithonidae	<i>Oithona</i>	<i>Oithona sp. Roadstead of Brest</i>
Chlorophyta	Mamiellophyceae	Mamiellales	Bathycoccaceae	<i>Ostreococcus</i>	<i>Ostreococcus sp. BCC15000</i>
Arthropoda	Maxillopoda	Calanoida	Paracalanidae	<i>Paracalanus</i>	<i>Paracalanus sp. Roadstead of Brest</i>
NA	NA	Pavloales	Pavlovaceae	<i>Pavlova</i>	<i>Pavlova sp. AC251</i>
NA	Pelagophyceae	Pelagomonadales	NA	<i>Pelagomonas</i>	<i>Pelagomonas calceolata</i>
NA	Spirotrichea	Choreotrichida	Strobilidiidae	<i>Pelagostrobilidium</i>	<i>Pelagostrobilidium minutum</i>
NA	Dinophyceae	Peridiniales	Peridiniaceae	<i>Pentapharsodinium</i>	<i>Pentapharsodinium tyrrhenicum</i>
NA	Synurophyceae	Ochromonadales	Ochromonadaceae	<i>Poterioochromonas</i>	<i>Poterioochromonas sp. DS</i>
NA	Chrysophyceae	Chromulinales	Dinobryaceae	<i>Poteriospumella</i>	<i>Poteriospumella sp.</i>
NA	Dinophyceae	Prorocentrales	Prorocentraceae	<i>Prorocentrum</i>	<i>Prorocentrum mexicanum</i>
Chlorophyta	Pedinophyceae	Marsupiomonadales	Marsupiomonadaceae	<i>Protoeuglena</i>	<i>Protoeuglena noctilucae</i>
NA	Dinophyceae	Peridiniales	Protoperidiniaceae	<i>Protoperidinium</i>	<i>Protoperidinium bipes</i>
NA	Dinophyceae	Peridiniales	Protoperidiniaceae	<i>Protoperidinium</i>	<i>Protoperidinium bipes</i>
NA	NA	Prymnesiales	Prymnesiaceae	<i>Prymnesium</i>	<i>Prymnesium polylepis</i>
Bacillariophyta	Bacillariophyceae	Bacillariales	Bacillariaceae	<i>Pseudo-nitzschia</i>	<i>Pseudo-nitzschia australis</i>
Chlorophyta	NA	Pyramimonadales	NA	<i>Pyramimonas</i>	<i>Pyramimonas disomata</i>
Chordata	Ascidiacea	Stolidobranchia	Pyuridae	<i>Pyura</i>	<i>Pyura gangelion</i>
Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	<i>Rhizobium</i>	<i>Rhizobium gallicum</i>
Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	<i>Rhizobium</i>	<i>Rhizobium rosettiformans</i>
Mucoromycota	NA	Mucorales	Rhizopodaceae	<i>Rhizopus</i>	<i>Rhizopus caespitosus</i>



Proteobacteria	Alphaproteobacteria	Rhodobacterales	Rhodobacteraceae	<i>Rhodobacter</i>	<i>Rhodobacter</i> sp. TBTK040402D
NA	Cryptophyta	Pyrenomonadales	Pyrenomonadaceae	<i>Rhodomonas</i>	<i>Rhodomonas</i> sp. 08C1
Proteobacteria	Alphaproteobacteria	Rhodospirillales	Rhodospirillaceae	NA	<i>Rhodospirillaceae</i> bacterium PS4B-B496
NA	Dinophyceae	Peridinales	Thoracosphaeraceae	<i>Scrippsiella</i>	<i>Scrippsiella acuminata</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Skeletonemataceae	<i>Skeletonema</i>	<i>Skeletonema ardens</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Skeletonemataceae	<i>Skeletonema</i>	<i>Skeletonema menzellii</i>
NA	Chrysophyceae	NA	NA	NA	<i>Spumella</i> -like flagellate JBAS37
NA	Dinophyceae	NA	NA	<i>Stoeckeria</i>	<i>Stoeckeria algicida</i>
NA	Spirotrichea	Choreotrichida	Strombidinopsidae	<i>Strombidinopsis</i>	<i>Strombidinopsis</i> sp. JG-2011a
NA	Spirotrichea	NA	Strombidiidae	<i>Strombidium</i>	<i>Strombidium</i> sp. FG-2015d
NA	Placididea	NA	NA	<i>Suigetsumonas</i>	<i>Suigetsumonas clinomigrationis</i>
NA	Cryptophyta	Pyrenomonadales	Geminigeraceae	<i>Teleaulax</i>	<i>Teleaulax acuta</i>
Chlorophyta	Chlorodendrophyceae	Chlorodendrales	Chlorodendraceae	<i>Tetraselmis</i>	<i>Tetraselmis cordiformis</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira antarctica</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira antarctica</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira hendeyi</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira lundiana</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira lundiana</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira oceanica</i>
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira</i> sp. RCC4792
Bacillariophyta	Coscinodiscophyceae	Thalassiosirales	Thalassiosiraceae	<i>Thalassiosira</i>	<i>Thalassiosira tenera</i>
NA	Cryptophyta	NA	NA	<i>Urgorri</i>	<i>Urgorri complanatus</i>
NA	Cryptophyta	NA	NA	<i>Urgorri</i>	<i>Urgorri complanatus</i>
NA	Raphidophyceae	Chattonellales	Chattonellaceae	<i>Viridilobus</i>	<i>Viridilobus marinus</i>
NA	Dinophyceae	Gymnodiniales	Warnowiaceae	<i>Warnowia</i>	<i>Warnowia</i> sp. BSL-2009a
Proteobacteria	Alphaproteobacteria	Rhizobiales	Xanthobacteraceae	<i>Xanthobacter</i>	<i>Xanthobacter autotrophicus</i>
NA	Dinophyceae	Suessiales	Suessiaceae	<i>Yihiella</i>	<i>Yihiella yeosuensis</i>

Lampiran 5. Logbook Kegiatan Penelitian

No	Hari dan Tanggal	Waktu (WITA)	Durasi	Kegiatan	Tujuan	Tempat	Dokumentasi
1	Minggu, 07 Januari 2023	09.00 - selesai	-	Penyiapan alat dan bahan penyaringan	Mempersiapkan alat yang akan digunakan pada saat proses penyaringan sampel	PUSLIT BIOTEKNOLOGI UNHAS	
2	Selasa, 10 Januari 2023	11.00 - selesai	-	Sterilisasi alat	Menghilangkan bakteri dan membersihkan alat untuk preparasi sampel	Lab Bioteknologi dan Pemuliaan Pohon Fakultas Kehutanan Universitas Hasanuddin	

No	Hari dan Tanggal	Waktu (WITA)	Durasi	Kegiatan	Tujuan	Tempat	Dokumentasi
3	Senin, 23 Januari 2023	09.00 - selesai	-	Perendaman equipment sampling dan filter	Mensterilkan jerigen dan seperangkat alat filtrasi dengan merendam pada cairan bleach	Mensterilkan jerigen dan seperangkat alat filtrasi dengan merendam pada cairan bleach	
4	Rabu, 01 Februari 2023	09.00 - selesai	-	Sampling	Pengambilan sampel air pada perairan hutan mangrove kemudian dilanjutkan dengan filtrasi sampai dengan preparasi sampel	Kawasang Hutan Mangrove Lantebung Makassar	
				Filtasi	Menyaring sampel hingga mendapatkan ekstrak dari sampel air	Puslit Bioteknologi LPPM UNHAS	

No	Hari dan Tanggal	Waktu (WITA)	Durasi	Kegiatan	Tujuan	Tempat	Dokumentasi
				Preparasi sampel	Mengawetkan sampel dengan memasukkan hasil filtrasi ke dalam e-DNA shield	Puslit Bioteknologi LPPM UNHAS	
5	Jumat, 03 Februari 2023	09.00 - selesai	-	Preparasi sampel	Penyiapan alat dan bahan kemudian dilakukan packing dan dikirim	Puslit Bioteknologi LPPM UNHAS	
6	Selasa, 07 Februari 2023	-	-	Sampel tiba Proses ekstraksi	Sampel yang telah dikirim ke Bogor telah tiba dan akan segera dilakukan uji Laboratorium	PT. Oceanogen Baruga Indonesia	

No	Hari dan Tanggal	Waktu (WITA)	Durasi	Kegiatan	Tujuan	Tempat	Dokumentasi
7	Senin, 13 Februari 2023			Elektroporesis	Untuk mengetahui ukuran DNA dengan menggunakan DNA marker yang sudah diketahui ukurannya	PT. Oceanogen Baruga Indonesia	
8	Rabu, 1 Maret 2023	-	-	Amplifikasi DNA	Mengetahui kondisi optimal untuk amplifikasi DNA lanjutan	PT. Oceanogen Baruga Indonesia	
9	Senin, 9 May 2023	-	-	Analisis Bioinformatika	Tahap terakhir dengan menggunakan aplikasi QIIMEI 2	PT. Oceanogen Baruga Indonesia	-