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## LAMPIRAN

### Lampiran 1. Glossarium

#### Daftar Istilah

<b>Istilah</b>	<b>Arti dan penjelasan</b>
Anneling	Metode perlakuan panas pada material yang bertujuan meningkatkan keuletan dan mengurangi kekerasan suatu bahan.
Amplifikasi DNA	Peningkatan jumlah Salinan dari satu bagian spesifik dari DNA
Delesi	Jenis mutase kromosom yang membuat bagian tertentu dari kromosom hilang atau terhapus
Denaturasi DNA	Proses pemanasan DNA dengan penambahan senyawa alkali kuat yang menyebabkan ikatan hydrogen pada DNA labil dan terputus
Domestikasi	Suatu budi daya yang dilakukan oleh manusia pada tumbuhan atau hewan yang menyebabkan perubahan genetik pada organisme tersebut
Elektroforesis	Metode pemisahan di mana molekul bermuatan bermigrasi dalam kecepatan diferensial di medan listrik yang diterapkan
Fenotipe	Karakteristik yang dapat diamati/dilihat/diukur dari suatu organisme
Filogenetik	Salah satu cabang dari biologi yang berhubungan, mempelajari dan menentukan hubungan evolusioner, atau juga pola keturunan, kelompok organisme
Galur	Sekelompok individu sejenis yang memiliki sifat keturunan tertentu yang seragam dan stabil
Gen	Unit pewarisan sifat bagi organisme hidup
Genom	Materi genetic dalam suatu organisme
Genotipe	Keadaan genetik dari suatu individua tau sekumpulan individu populasi
Homogen	Suatu benda atau zat yang memiliki komposisi, sifat, dan susunan molekul yang seragam atau sama di seluruh bagian atau volume
Homologi	Konsep dalam biologi yang mengacu pada kesamaan struktur, genetika, atau fungsi antara organisme yang memiliki nenek moyang yang sama
Insersi	Peristiwa penambahan satu basa nitrogen pada gen
Mutagen	Agen fisik atau kimia yang menyebabkan terjadinya mutasi pada materi genetik
Polimorfisme	Ketika dua atau beberapa fenotipe yang berbeda ada

Sekuen	dalam populasi suatu spesies Urutan dari nukleotida yang dapat berhubungan dengan fungsi biologis
Sekuensing	Teknik untuk menentukan urutan basa nukleotida pada DNA
Sentrifugasi	Proses pemisahan campuran, terutama yang terdiri dari padatan dan cairan dengan kepadatan berbeda
Supernatan	Cairan yang dapat diamati di atas endapan padat
Teleostei	Ikan yang memiliki rangka terdiri dari tulang, insang terletak dalam rongga yang tertutup-insang
Transisi	Pergantian basa nitrogen yang sejenis
Transversi	Pergantian basa nitrogen yang tidak sejenis

#### Daftar singkatan

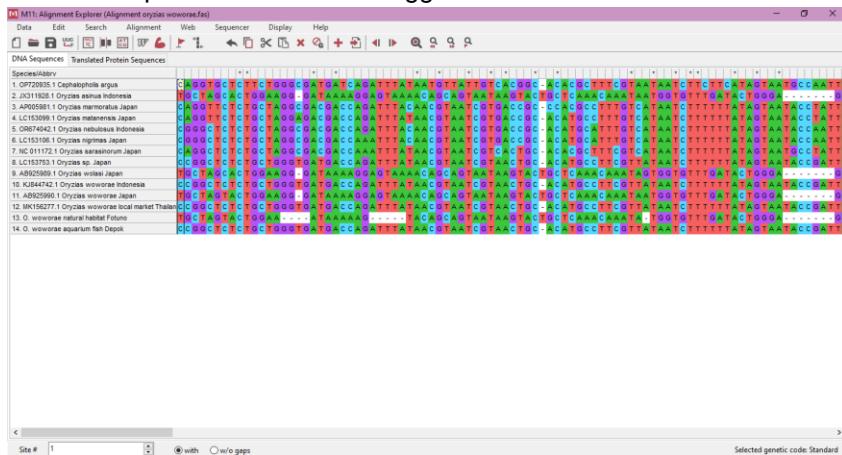
Lambang/ Singkatan	Arti dan penjelasan
DNA	Deoxyribunucleic Acid
COI	Cytochrome Oxidase Subunit I
Cyt.b	Cytochrome b
CTAB	Cetyl Trimethyl Ammonium Bromide
DTAB	Dodecyl Trimethyl Ammonium Bromide
µL	Mikro liter
rpm	Revolusi per menit
Tris EDTA	Tris ethylene diamine tetraacetic acid
PCR	Polymerase Chain Reaction
BLAST	Basic Local Alignment Search Tool
AT	Adenin-Timin
GC	Guanin-Sitosin

Lampiran 2. Hasil blasting *Oryzias woworae* sampel secara online pada laman web NCBI menggunakan program BLAST

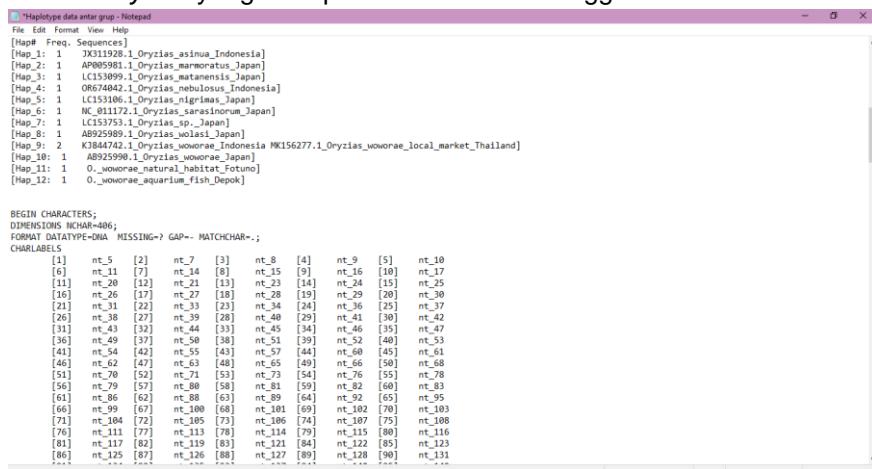
Sequences producing significant alignments		Download	Select columns	Show 100	?			
<input checked="" type="checkbox"/> select all 100 sequences selected		GenBank	Graphics	Distance tree of results	MSA Viewer			
Description	Scientific Name	Max Score	Total Score	Cover	E value	Per Ident	Acc Len	Accession
<input checked="" type="checkbox"/> Oryzias woworae isolate local market cytochrome oxidase subunit I (COI) gene, partial cds, mitochondrial	Oryzias woworae	1061	1081	96%	0.0	95.16%	836	MK156277_1
<input checked="" type="checkbox"/> Oryzias woworae mitochondrial gene for cytochrome oxidase subunit I, partial cds	Oryzias woworae	1024	1023	91%	0.0	95.20%	665	AB252395_1
<input checked="" type="checkbox"/> Oryzias woleai mitochondrial gene for cytochrome oxidase subunit I, partial cds	Oryzias woleai	1007	1007	91%	0.0	94.74%	665	AB252388_1
<input checked="" type="checkbox"/> Oryzias se_ 2 DNL_2012 voucher USNM 405316 cytochrome oxidase subunit I gene, partial cds, mitochondrial	Oryzias woleai	1002	1002	91%	0.0	94.59%	665	JX311936_1
<input checked="" type="checkbox"/> Oryzias se_ 2 DNL_2012 voucher USNM 405317 cytochrome oxidase subunit I gene, partial cds, mitochondrial	Oryzias woleai	1002	1002	91%	0.0	94.59%	665	JX311932_1
<input checked="" type="checkbox"/> Oryzias se_ SONCU-A2781 mitochondrial COI gene for cytochrome oxidase subunit I, partial cds, specimen_voucher	Oryzias se_ SONCU...	1000	1000	90%	0.0	94.84%	658	LC151753_1
<input checked="" type="checkbox"/> Oryzias se_ 1 DNL_2012 voucher USNM 405302 cytochrome oxidase subunit I gene, partial cds, mitochondrial	Oryzias ashmeadi	996	996	91%	0.0	94.44%	665	JX311928_1
<input checked="" type="checkbox"/> Oryzias se_ 1 DNL_2012 voucher USNM 405329 cytochrome oxidase subunit I gene, partial cds, mitochondrial	Oryzias ashmeadi	990	990	91%	0.0	94.29%	665	JX311925_1
<input checked="" type="checkbox"/> Oryzias se_ 1 DNL_2012 voucher USNM 405301 cytochrome oxidase subunit I gene, partial cds, mitochondrial	Oryzias ashmeadi	985	985	91%	0.0	94.14%	665	JX311927_1
<input checked="" type="checkbox"/> Oryzias se_ 1 DNL_2012 voucher USNM 405300 cytochrome oxidase subunit I gene, partial cds, mitochondrial	Oryzias ashmeadi	985	985	91%	0.0	94.14%	665	JX311926_1
<input checked="" type="checkbox"/> Oryzias se_ 1 DNL_2012 voucher USNM 405299 cytochrome oxidase subunit I gene, partial cds, mitochondrial	Oryzias ashmeadi	979	979	91%	0.0	93.99%	665	JX311925_1
<input checked="" type="checkbox"/> Oryzias woleai voucher ZCMM 1676 cytochrome oxidase subunit 1 (cox1) gene, partial cds, mitochondrial	Oryzias woleai	883	883	77%	0.0	95.43%	571	KJ844742_1
<input checked="" type="checkbox"/> Xenopus laevis mitochondrial complete genome	Xenopus laevis	710	710	96%	0.0	85.63%	16462	NC_011172_1
<input checked="" type="checkbox"/> Oryzias marmoratus mitochondrial DNA complete genome, except for D-loop	Oryzias marmoratus	682	682	96%	0.0	84.94%	15921	AP005591_1
<input checked="" type="checkbox"/> Oryzias sarasinorum mitochondrial COI gene for cytochrome oxidase subunit I, partial cds, specimen_voucher	Oryzias sarasinorum	664	664	89%	0.0	85.76%	658	LC151750_1
<input checked="" type="checkbox"/> Oryzias marmoratus mitochondrial COI gene for cytochrome oxidase subunit I, partial cds, specimen_voucher	Oryzias marmoratus	636	636	89%	3e-177	85.02%	658	LC154797_1
<input checked="" type="checkbox"/> Oryzias matilebias mitochondrial COI gene for cytochrome oxidase subunit I, partial cds, specimen_voucher	Oryzias matilebias	632	632	89%	4e-176	84.89%	658	LC153099_1

Descriptions		Graphic Summary		Alignments		Taxonomy		Download		Select columns		Show	
<b>Sequences producing significant alignments</b>													
<input checked="" type="checkbox"/> select all	100 sequences selected							GenBank	Graphics	Distance tree of results	MSA Viewer		
		Description		Scientific Name	Max Score	Total Score	Query Cover	E value	Pearson Ident.	Avg Acc.	Lan	Accession	
<input checked="" type="checkbox"/>	Oryzias enerata Isolate local market cytochrome oxidase subunit I/COI gene partial cds mitochondrial	Oryzias enerata	1273	1273	99%	0.0	99.29%	836	MK156277.1				
<input checked="" type="checkbox"/>	Oryzias weworae mitochondrial gene for cytochrome oxidase subunit I partial cds	Oryzias weworae	1218	1218	93%	0.0	99.70%	665	AB925995.1				
<input checked="" type="checkbox"/>	Oryzias weworae mitochondrial gene for cytochrome oxidase subunit I partial cds	Oryzias weworae	1195	1195	93%	0.0	99.10%	665	AB925980.1				
<input checked="" type="checkbox"/>	Oryzias sp_1 DNU-2012 voucher USNM_465316 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias weworae	1190	1190	93%	0.0	98.95%	665	JX311936.3				
<input checked="" type="checkbox"/>	Oryzias sp_2 DNU-2012 voucher USNM_465313 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias weworae	1190	1190	93%	0.0	98.95%	665	JX311932.1				
<input checked="" type="checkbox"/>	Oryzias sp_3 DNU-2012 voucher USNM_465302 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias astrius	1190	1190	93%	0.0	98.95%	665	JX311928.1				
<input checked="" type="checkbox"/>	Oryzias sp_4 DNU-2012 voucher USNM_465301 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias astrius	1186	1186	92%	0.0	99.24%	658	LC153753.1				
<input checked="" type="checkbox"/>	Oryzias sp_5 DNU-2012 voucher USNM_465329 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias astrius	1184	1184	93%	0.0	98.80%	665	JX311925.1				
<input checked="" type="checkbox"/>	Oryzias sp_6 DNU-2012 voucher USNM_465301 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias astrius	1179	1179	93%	0.0	98.65%	665	JX311922.1				
<input checked="" type="checkbox"/>	Oryzias sp_7 DNU-2012 voucher USNM_465300 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias astrius	1179	1179	93%	0.0	98.65%	665	JX311921.1				
<input checked="" type="checkbox"/>	Oryzias sp_8 DNU-2012 voucher USNM_465309 cytochrome oxidase subunit I gene partial cds mitochondrial	Oryzias astrius	1173	1173	93%	0.0	98.56%	665	JX311925.1				
<input checked="" type="checkbox"/>	Oryzias weworae voucher ZCMV_14076 cytochrome oxidase subunit I (cox1) gene partial cds mitochondrial	Oryzias weworae	1050	1050	80%	0.0	99.83%	571	KJ684742.1				
<input checked="" type="checkbox"/>	Oryzias sarasinorum mitochondrial genome for cytochrome oxidase subunit I partial cds specimen_voucher	Oryzias sarasinorum	843	843	99%	0.0	88.34%	16462	NC_011172.1				
<input checked="" type="checkbox"/>	Oryzias marmoratus mitochondrial COI gene complete genome except D-loop	Oryzias marmoratus	821	821	99%	0.0	87.77%	15921	AP005981.1				
<input checked="" type="checkbox"/>	Oryzias sarasinorum mitochondrial COI gene for cytochrome oxidase subunit I partial cds specimen_voucher	Oryzias sarasinorum	796	796	91%	0.0	88.86%	658	LC154798.1				

Lampiran 3. Hasil alignment sampel O. weworae dan sekuen gen *Oryzias* yang terdeposit di Genbank menggunakan software MEGA X



Lampiran 4. Hasil analisis variasi genetik sampel O. weworae dan sekuen gen *Oryzias* yang terdeposit di Genbank menggunakan software DNAsp



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1 "Haplotype data enter gruop - Notepad
File Edit Format View Help
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TAGGGCGGGGGTCTCTACTATAGCCTTAAATAATGAGGGGGGATATE
Hap_2 .GCCACCA..TCAAC,...-CTGACCCCAAGCTT,GTCTCTTTAAGA,CTATT-GT,AAGGAAACTG,T.CCCC,TGCTGG,
CAGGGCTCC,C.GATAA-CATAT,TTTTGAC,.CTAC..CTCTTT,CTCTT..T.CCC,TCGGCAA,C.GG,GCC,GGGAGGAGG
C
ATTAACTAA,CTCT,-CATCACGGCTTATG,TG,TCAGACTT,-TGCGTTCTCTTA-CTT..T,CTAGGCATATGGCTGA,
CG-ACACAAACATTCTT,GACAGGG--GG,CCC--..CTCTTA,A.C,CT
Hap_3 ..G.GCCC,TTAAC,...-CTGACCC,CA,CTT,GTCTCTTTAAGA,CTATT-GT,AAGGAAACTGTT,CCCTC,TGCGG,
CGGGCTTCC,GAATG-AATATAGCTTGCAC,TA,ACCTTACTTTT,CT,CACCG-AGTATTTC,CTTATTTT,TTACCT
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CG-ACGGATCACTTCTGGACGGGG--GG,CTT--..CTCTTATA,C.TCT
Hap_4 ..GCCACCA..TCAAC,...-CTGACCC,CA,GATT,GTCTCTTTAAGA,CAATT-GT,AAGGAAACTG,CACCCC,TGCTGG,
CAGGGCTTCC,C.GATAA-CATAT,TTTTGAC,TCGGCCCCCTTTT,CTTTG,CCCTTCAAGCACAAC,G.GCC,GGGAGGAGG
AAGTTTACACTCTG,GTATGGGGCGACTCT,TT,ACCTTACTTTTCTCACCG-AG,TTTCTCATAGTATT,TTACCT
ATTAA,ATAAGCTCT,-CATGG,CCCTATGATGTTGG,CTGACT,-TGCGTTCTCTTA-,T,CTAGGCATAT,GCGTAA

2 Haplotype data habitat edit - Notepad
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;
MATRIX
[ 10   20   30   40 ]
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Hap_3 GAGAA..GGGGAGTAAAAGAGTAG, AAGGGGGAG, AGGGATAG,A
Hap_4 GAGAACGGGGAGTAAGGGAGTAG, AAGGGGGAGGGGGATAG,A

3 Haplotype data somenfile - Notepad
File Edit Format View Help
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EMB;

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KJ844742.1_Oryzias_wowrae_voucher_ZOM_14076_cytochrome_oxidase_subunit_I_(cox1)_gene_partial_cds_mitochondrial]
[Hapl_ 3 L155753.1_Oryzias_sp_-SOHCU-A2780_mitochondrial_(COI)_gene_for_cytochrome_oxidase_subunit_I_partial_cds_specimen_voucher_r_SOHCU-SOHCU-A2786]

BEGIN CHARACTERS;
DIMENSIONS NCHAR=5;
FORMAT DATATYPE=DNA MISSING=> GAP=< MATCHCHAR=<;
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