

## I. LAMPIRAN

Lampiran 1. Runutan basa pada sitokrom-b (1-1141 pb) *Cryptopterus minor* (*GenBank*); Nomor Akses: AY458895.

**Primer L14841 :**

**5' aaagcttccatccaacatctcagcatgatgaaa 3'**

(menempel pd. *cyt.b* *Cryptopterus minor* pd. basa 61 atau 63 s/d 92)

[*Cryptopterus minor*, "cyt.b"(1..1141 bp)]:

1 atggaacc gaaaaactca ccccttattt aaaattgcta acgacgcatt aattgaccta

**5' aaagcttccat ccaacatctc agcatgatga aa 3'**

61 ccagctccc-t ctaatatctc tgcatgatga aattttggct cctcctact cttatgcctt

121 atgtacaaa ttctaaccgg gctattttta gccatacact atacctcaga catctcaaca

181 gecttttct ctgttgccea catctgccga gacgtaaati acgggtggct tatccgaaac

241 ctccatgcca acggtgcatc cttctcttc atctgtatct acttacacat cggacgagc

301 ctctactatg gctcctactt atataaagaa acctgaaata ttggggtagt cctactactc

361 ctagtaatga taacagcctt tgtaggatat gtcttaccat gaggccaaat gtcattctga

**5' t gaggacaaat atcattctga**

**ggggctgcag ttt 3'**

421 ggcgccacag taatcacaaa tctctatec gccgtcccct atataggaga tgccttagta

481 caatgaatct gaggtgggtt ttccgtagat aatgcaacte teacacgctt ctctgcattc

541 cacttctac teccattcac aaltattgce gccacagcca tccatgcact atttttgcat

601 gaaactgget caaacacccc aacaggcctc aactcagacg cagataaaat ctctttccat

661 ccttacttct catataaaga ctactaggt ttattattt tactactgc tttacaacc

721 ctggcattat ttctccaaa cctattaggg gaccagaaa acttcacacc agccaacccc

781 ctagtacac cccacatat taaacctgaa tgatacttcc tatttgccta tgccattcta

841 cgatcaatcc ctaacaaact aggaggggtt ctagecttat tatttccat ccttgtacta

901 atagttgttc cctactaca cacctctaaa caacaaggcc tcactttccg cccaategcc

961 caattcctat tetgagccct ggtagcagat gtaataattc taacctgaat tggaggaata

1021 ccagtagaag atccctacgt catcatcgga caaattgcct cagtactata cttttccta

1081 ttctaattt taaacctct aaccgggcta ttagaaaaca aagccclaaa actcaactgc

1141 c

**Primer H15149 :**

**5' aaa ctg cag ccc ctc aga atg ata ttt gtc ctc a 3'**

lawan:

**3' ttt gac gtc ggg gag tct tac tat aaa cag gag t 5'**

**5' t gag gac aaa tat cat tct gag ggg ctg cag ttt 3'**

(menempel pd. *cyt.b* *Ictalurus punctatus* pd. basa 400 s/d 431 atau 433)



Lampiran 2. Runutan nukleotida gen sitokrom-b parsial *Cryptopterus* spp. hasil penjarangan berganda dengan pembandingan data GenBank

[				111	111	111	122	222	222	223	333	333	333	444	444	444	455	555	]	
[	123	456	789	012	345	678	901	234	567	890	123	456	789	012	345	678	901	234	]	
#C._minor	TTT	TCC	TCT	GTT	GCC	CAC	ATC	TGC	CGA	GAC	GTA	AAT	TAC	GGG	TGG	CTT	ATC	CGA		
#C._bicirrhis	...	...	..C	...	...	...	...	...	...	...	...	...	...	...	..A	...	...	...		
#C._cryptopterus	...	..A	..C	..A	...	...	...	...	...	..T	...	..C	...	..C	..A	..A	...	..C		
#C._limpok	...	..A	..C	..A	...	...	...	...	...	...	...	..C	..T	..C	..A	..A	..T	..C		
#C._macrocephalus	...	..A	..C	..C	...	..T	...	...	...	..T	..T	...	..T	..A	..A	..A	...	...		
#C._schilbeides	...	..A	..C	..A	...	...	...	..T	...	...	...	..C	...	..T	..A	..A	..T	..T		
LJK2_F	...	..A	..C	..A	...	...	...	...	...	...	...	..C	..T	..C	..A	..A	..T	..C		
LJK2_R	...	..A	..C	..A	...	...	...	...	...	...	...	..C	..T	..C	..A	..A	..T	..C		
LJI3_F	...	..A	..C	..A	...	...	...	...	...	...	...	..C	..T	..C	..A	..A	..T	..C		
LJI3_R	...	..A	..C	..A	...	...	...	...	...	...	...	..C	..T	..C	..A	..A	..T	..C		
LPLK10_F	...	..A	..C	..A	...	...	...	...	...	...	...	..C	...	..A	..A	T.A	..T	..C		
LPLK10_R	...	..A	..C	..A	...	...	...	...	...	...	...	..C	...	..A	..A	T.A	..T	..C		
LPLI6_F	...	..A	..C	..A	...	...	...	...	...	...	...	..C	...	..A	..A	T.A	..T	..C		
LPLI6_R	...	..A	..C	..A	...	...	...	...	...	...	...	..C	...	..A	..A	T.A	..T	..C		
[																	111	111	111	]
[	555	556	666	666	666	777	777	777	788	888	888	889	999	999	999	000	000	000	]	
[	567	890	123	456	789	012	345	678	901	234	567	890	123	456	789	012	345	678	]	
#C._minor	AAC	CTC	CAT	GCC	AAC	GGT	GCA	TCC	TTC	TTC	TTC	ATC	TGT	ATC	TAC	TTA	CAC	ATC		
#C._bicirrhis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
#C._cryptopterus	.G.	..T	..C	...	...	..A	..T	..T	...	...	...	...	..C	...	...	C.T	...	...		
#C._limpok	...	..G	..C	...	...	..A	..C	..T	...	...	...	...	..C	...	...	C.G	...	...		
#C._macrocephalus	...	T..	..C	...	..T	..C	...	...	...	...	...	...	..C	..T	..T	C.C	...	..T		
#C._schilbeides	..T	A.T	..C	...	..T	..G	..T	...	...	...	...	...	..C	...	..T	C.C	...	...		
LJK2_F	...	..A	..C	...	...	..A	..C	..T	...	...	...	...	..C	...	...	C..	...	...		
LJK2_R	...	..A	..C	...	...	..A	..C	..T	...	...	...	...	..C	...	...	C..	...	...		



```

LJI3_F      ... ..A ..C ... ..T ..A ..C ..T ... ..C ... ..C.. ... ..
LJI3_R      ... ..A ..C ... ..T ..A ..C ..T ... ..C ... ..C.. ... ..
LPLK10_F    ... ..A ... .. ..A ..C ..T ... ..C ... ..C.. ... ..
LPLK10_R    ... ..A ... .. ..A ..C ..T ... ..C ... ..C.. ... ..
LPLI6_F     ... ..A ... .. ..A ..C ..T ... ..C ... ..C.. ... ..
LPLI6_R     ... ..A ... .. ..A ..C ..T ... ..C ... ..C.. ... ..

[           111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 111 ]
[           011 111 111 112 222 222 222 333 333 333 344 444 444 445 555 555 555 ]
[           901 234 567 890 123 456 789 012 345 678 901 234 567 890 123 456 789 ]
#C._minor   GGA CGA GGC CTC TAC TAT GGC TCC TAC TTA TAT AAA GAA ACC TGA AAT ATT
#C._bicirrhis ... ..T ... ..C ..T ... ..C.T ..C ... ..C ..C
#C._cryptopterus ... ..T ... ..C ..T ... ..C.T ..C ... ..C ..C
#C._limpok   ... ..T ..T ..C ... ..A ..T C.. ..C ... ..G ... ..C ...
#C._macrocephalus ... ..A ... ..C ... ..A ..T C.T ..C ... ..C ..C
#C._schilbeides ... ..T ... ..C ..A ..A ..T C.. ... ..A ... ..C ...
LJK2_F      ... ..T ..T ..C ... ..A ..T C.. ..C ... ..G ... ..C ...
LJK2_R      ... ..T ..T ..C ... ..A ..T C.. ..C ... ..G ... ..C ...
LJI3_F      ... ..T ..T ..C ... ..A ..T C.. ..C ... ..C ..C
LJI3_R      ... ..T ..T ..C ... ..A ..T C.. ..C ... ..C ..C
LPLK10_F    ... ..T ..T ... ..A ... C.. ..C ... ..G ... ..C ...
LPLK10_R    ... ..T ..T ... ..A ... C.. ..C ... ..G ... ..C ...
LPLI6_F     ... ..T ..T ... ..A ... C.. ..C ... ..C ..C
LPLI6_R     ... ..T ..T ... ..A ... C.. ..C ... ..C ..C

```

Keterangan: # = data GenBank

Lampiran 3. Runutan asam amino hasil translasi gen sitokrom-b parsial *Cryptopterus* spp. dengan pembandingan data *GenBank*

[		1	1111111112	2222222223	3333333334	4444444445	555]
[	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	123]
#C. <i>minor</i>	FSSVAHICRD	VNYGWLIRNL	HANGASFFFI	CIYLGHIGRGL	YYGSYLYKET	WNI	
#C. <i>bicirrhis</i>	.....	.....	.....	.....	.....	.....	.....
#C. <i>cryptopterus</i>	.....	.....	.....S.....	.....	.....	.....	.....
#C. <i>limpok</i>	.....	.....	.....	.....	.....	.....	.....
#C. <i>macrocephalus</i>	.....	.....	.....F.....	.....	.....	.....	.....
#C. <i>schilbeides</i>	.....	.....	.....I.....	.....	.....	.....	.....
LJK2_F	.....	.....	.....	.....	.....	.....	.....
LJK2_R	.....	.....	.....	.....	.....	.....	.....
LJI3_F	.....	.....	.....	.....	.....	.....	.....
LJI3_R	.....	.....	.....	.....	.....	.....	.....
LPLK10_F	.....	.....	.....	.....	.....	.....	.....
LPLK10_R	.....	.....	.....	.....	.....	.....	.....
LPLI6_F	.....	.....	.....	.....	.....	.....	.....
LPLI6_R	.....	.....	.....	.....	.....	.....	.....

Keterangan: # = data *GenBank*

## II. INSTRUMEN PENELITIAN

No.	Nama Alat	Kegunaan
1.	Mesin <i>thermal cyclers</i> (PCR)	Mengamplifikasi gen sitokrom-b dengan sepasang primer ( <i>forward dan reverse</i> )
2.	Mesin sentrifus	Memisahkan larutan dan mengendapkan DNA
3.	Inkubator	Inkubasi sesuai suhu yang diinginkan
4.	Vortex	Pencampur larutan
6.	Alat elektroforesis	Memisahkan segmen DNA berdasarkan aliran listrik
7.	UV transluminator	Visualisasi DNA
8.	Timbangan analitis	Menimbang bahan kimia
9.	Pipetor	Untuk mengambil larutan dengan volume tertentu secara akurat

### FOTO ALAT-ALAT YANG DIPAKAI DALAM PENELITIAN



Mesin *thermal cyclers* (PCR)



Mesin sentrifus



Inkubator



Vortex



**FOTO ALAT-ALAT YANG DIPAKAI DALAM PENELITIAN**

Alat elektroforesis



UV transluminator



Timbangan analitis



Pipetor