**Table S1.** Primers used for amplication of *Oxyurichthys ophthalmonema* and *Oxyurichthys microlepis* mitogenomes

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Length** | **Sequence (5’-3’)** | **References** |
| **Dloop-Thr-F** | 20 | AGCACCGGTCTTGTAAACCG | Cheng et al. 2012 |
| **Dloop-Phe-R** | 21 | GGGCTCATCTTAACATCTTCA | Cheng et al. 2012 |
| **Fish-F1** | 26 | TCAACCAACCACAAAGACATTGGCAC | Ward et al. 2005 |
| **Fish-R1** | 26 | TAGACTTCTGGGTGGCCAAAGAATCA | Ward et al. 2005 |
| **Oxy1-F** | 21 | AGC CCT AGA AAG CTC CGT AAG | This study |
| **Oxy1-R** | 22 | TTT GCA CAG GTA TCT TCT CGG T | This study |
| **Oxy2-F** | 21 | TGG AAA AAC CAG AGT GTA GCT | This study |
| **Oxy2-R** | 22 | GGC GGG ACC TCT TAT ACT TTG T | This study |
| **Oxy3F** | 22 | CCT AAT GGT GCA GCC GCT ATT A | This study |
| **Oxy3-R** | 22 | TAC CAT ATT GCA GCA AGG GGT C | This study |
| **Oxy4-F** | 21 | GCC CAG GAG AGC ATC TGA CTA | This study |
| **Oxy4-R** | 21 | AGA GCT GGA AAG TGT GAT TGT | This study |
| **Oxy5-F** | 20 | CCC ATA CCC CAA ACA TGT TG | This study |
| **Oxy5-R** | 18 | GTA GTG CTG TTA TGG CAG | This study |
| **Oxy6-F** | 22 | TGC CCA AAT GAC TTA TCC TTC A | This study |
| **Oxy6-R** | 22 | CAG TTG CCA AAA CCT CCG ATT A | This study |
| **Oxy7-F** | 19 | CCT TCT GGG GGA GGA GAC C | This study |
| **Oxy7-R** | 20 | TCG AGT CCT CCC TTT CTC GT | This study |
| **Oxy8-F** | 21 | ACA CCT TTG AAG AGC CAG CTT | This study |
| **Oxy8-R** | 21 | GCA TGT CAC TAA GGG TGG TTG | This study |
| **Oxy9-F** | 21 | AAA CAG GGC TAT AGC GTC AGC | This study |
| **Oxy9-R** | 21 | AAC TGC TCC TGT TAG GGG TCA | This study |
| **Om10-F** | 23 | AGC CTC TAC CTT CAA GAA AAC GT | This study |
| **Om10-R** | 22 | CCA AGA CCT GGT GAT TGG AAG T | This study |
| **Oxy11-F** | 21 | TGA TGA GGC TCA TAT CTT TCT | This study |
| **Oxy11-R** | 23 | TGT TGG GAT TAG GAT TTT TAG CA | This study |
| **Oxy12-F\*** | 21 | CTA CTG CTC GCA CAC ATG GAA | This study |
| **Oxy12-R\*** | 22 | GCA AGG ATG ATG AAA GGG TAG C | This study |
| Oxy13-F\*\* | 18 | CTG TGA AGC CAG TGC AGG  | This study |
| Oxy13-R\*\* | 23 | GGC TCG AGT ATA ATT ATT ATT CG | This study |
| **Oxy14-F** | 21 | TGC TGG CTC AAT AGT CCT TGC | This study |
| **Oxy14-R** | 21 | AAG ACC AAT GGA TTA GCT GTT | This study |
| **Oxy15-F** | 21 | AAC GAA GAC TGC TAA CCC TCG | This study |
| **Oxy15-R** | 21 | ATG AAG TAG GGC AGA TAC CGG | This study |
| **Oxy16-F** | 21 | AGT TTG GAC TTC ACC CCT GAC | This study |
| **Oxy16-R** | 23 | AGC AAT ATA CTG CCC AAG AAG GA | This study |
| Oxy17-F\* | 21 | CCC TAT TAT TCC TCT CCA CCA | This study |
| Oxy17-R\* | 19 | TGT TTT TCG TAG GCT TGT C | This study |
| Oxy18-F\*\* | 20 | CAC TTC TCA AAC ATG CTT GG | This study |
| Oxy18-R\*\* | 21 | TTT CCT GTA GTT GAA TAA CAA | This study |
| **Oxy19-F** | 22 | CCT GCC AGG ATT TTA ACC AGG A | This study |
| **Oxy19-R** | 21 | GGG TGG AAG GGG ATT TTG TCT | This study |
| **Oxy20-F** | 22 | TCC TTT CTG CAG TCC CTT ATG T | This study |
| **Oxy20-R** | 23 | TGG ACA AAT CCT ATT AAT GTG GA | This study |
| **Oxy21-F** | 18 | CCC CCT AAA CTC GTA AAC | This study |
| **Oxy21-R** | 19 | GCA TTC TCA CAG GGA TGC G | This study |

Bold: Primers used for both species. \*: Primers used for *Oxyurichthys ophthalmonema* only.

\*\*: Primers used for *Oxyurichthys microlepis* only.