

Keragaman Genetik Ikan Glodok (*Periophthalmodon schlosseri* (Pallas, 1770)) dari Hutan Mangrove Pateguran, Pasuruan, Jawa Timur Berdasarkan Gen Mitokondria 16S

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INTISARI

Indonesia merupakan negara yang memiliki kawasan hutan mangrove sangat luas salah satunya terletak di Hutan Mangrove Pateguran, Pasuruan, Jawa Timur. Lokasi tersebut menjadi habitat beragam jenis ikan termasuk ikan glodok dari spesies *Periophthalmodon schlosseri*. Akan tetapi, penelitian mengenai keragaman genetik ikan glodok spesies *P. schlosseri* menggunakan gen mitokondria 16S dari Hutan Mangrove Pateguran belum pernah dilakukan. Oleh karena itu, dilakukan penelitian keragaman genetik ikan glodok spesies *P. schlosseri* dari Hutan Mangrove Pateguran, Pasuruan, Jawa Timur menggunakan gen mitokondria 16S. Penelitian ini menggunakan metode PCR dengan primer universal 16Sar dan 16Sbr. Tahapan penelitian terdiri dari isolasi DNA, amplifikasi DNA, elektroforesis, purifikasi, dan sekuensing. Data dianalisis menggunakan *software* GeneStudio, DNASTAR, BLAST, MESQUITE, MEGA, DnaSP, dan PopArt. Hasil analisis similaritas *P. schlosseri* dari Hutan Mangrove Pateguran, Pasuruan, Jawa Timur melalui BLAST NCBI rata-rata nilai similaritas 97.09%-99.65% dengan sekuens *P. schlosseri* yang berasal dari *GenBank*. Analisis variasi genetik intrapopulasi dan interpopulasi sampel ikan glodok *P. schlosseri* menunjukkan adanya perbedaan komposisi nukleotida, jarak genetik 0%, nilai keragaman haplotipe (Hd) yang tergolong tinggi, dan nilai keragaman nukleotida (π) yang tergolong rendah. Hasil rekonstruksi pohon filogenetik menunjukkan seluruh sampel berada dalam satu *clade*. Analisis *haplotype network* menunjukkan bahwa sampel dari kawasan Hutan Mangrove Pateguran terbagi menjadi 7 haplotipe dan salah satu sampel penelitian bergabung dengan sekuens pembanding. Hasil yang diperoleh dari penelitian ini diharapkan dapat memberikan informasi genetik ikan glodok spesies *Periophthalmodon schlosseri* dari Hutan Mangrove Pateguran, Pasuruan, Jawa Timur yang dapat dimanfaatkan sebagai pustaka gen mitokondria 16S, referensi konservasi, dan penelitian lanjutan ikan glodok.

Kata kunci : gen 16S, keragaman genetik, *Periophthalmodon schlosseri*

Genetic Variation of Mudskipper (*Periophthalmodon schlosseri* (Pallas, 1770)) from Pateguran Mangrove Forest, Pasuruan, East Java Based on 16S Mitochondrial Gene

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ABSTRACT

Indonesia is a country that has a very large mangrove forest area, one of them is located in the Pateguran Mangrove Forest, Pasuruan, East Java. This location is a habitat for various types of fish including mudskipper fish with one of the species *Periophthalmodon schlosseri*. However, research on the genetic variation of mudskipper fish using the 16S mitochondrial gene from the Pateguran Mangrove Forest has never been done. Therefore, a study on genetic variation of mudskipper species *P. schlosseri* from Pateguran Mangrove Forest, Pasuruan, East Java was conducted using the 16S mitochondrial gene. This study used a PCR method with universal primers *16Sar* and *16Sbr*. The research stages consisted of DNA isolation, DNA amplification, electrophoresis, purification, and sequencing. Data were analyzed using GeneStudio, DNASTAR, BLAST, MESQUITE, MEGA, DnaSP, and PopArt software. The analysis of *P. schlosseri* from Pateguran Mangrove Forest, Pasuruan, East Java showed genetic variation. The results of similarity analysis of *P. schlosseri* from Pateguran Mangrove Forest, Pasuruan, East Java through BLAST NCBI showed an average similarity value of 97.09%-99.65% compared to *P. schlosseri* sequences from *GenBank*. The analysis of intrapopulation and interpopulation genetic variation of *P. schlosseri* samples showed differences in nucleotide composition, 0% genetic distance, high haplotype diversity (Hd), and low nucleotide diversity (π). Phylogenetic analysis showed that all samples of *P. schlosseri* investigated in this study were in one clade. The haplotype network analysis indicated that samples from the Pateguran Mangrove Forest area were divided into 7 haplotypes and one of the samples is shared with the sequence of *P. schlosseri* from *GenBank* database (NC_030766.1). The results obtained from this study are expected to provide genetic information on mudskipper fish species *Periophthalmodon schlosseri* from Pateguran Mangrove Forest, Pasuruan, East Java which can be utilized as a 16S mitochondrial gene library, conservation reference, and further research on mudskipper fish.

Keywords: 16S gene, genetic variation, *Periophthalmodon schlosseri*