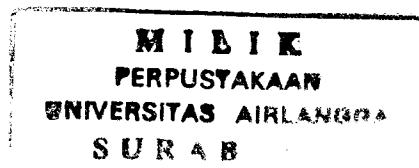


Wilna Dwi Kurnia Anggun, 2016, Penentuan Posisi Taksonomi *Holothuria forskali* di Kawasan Pantai Timur Surabaya Berdasarkan Karakteristik Morfologi dan Molekuler, skripsi ini dibawah bimbingan Prof. Dr. Bambang Irawan M.Sc. dan Dr. Dwi Winarni M, Si. Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengidentifikasi karakter morfologi dan menganalisis informasi genetik dari sekuen gen mitokondria COI (*Cytochrome oxidase subunit I*) spesimen yang diduga *Holothuria forskali* dari Pantai Timur Surabaya untuk mengetahui identitas dan menentukan posisi taksonomi dalam sistem klasifikasi ilmiah. Spesimen penelitian diambil dari 3 titik antara S 07°17.235' E 112°15,084-S 07°13.905' E 112°45.569' di Kawasan Pantai Timur Surabaya, kemudian dimasukkan dalam larutan MgCl₂ 7%, spesimen dideskripsi secara morfologi berdasarkan bentuk, warna, panjang, diameter, dinding pada tubuh, bentuk tentakel, jumlah jari tentakel, pola cincin kapur dan bentuk osikula. Secara molekuler, DNA spesimen diekstrak, diamplifikasi menggunakan PCR, disekuensing dan disejajarkan menggunakan *software* Geneious versi 9.0.4. Sekuen COI dimasukan ke dalam program BLAST untuk mengetahui tingkat homologinya dibanding spesies *voucher* dari seluruh *database* pada GenBank. Kemudian, dilakukan rekonstruksi pohon filogenetik antara sekuen DNA spesimen dan beberapa spesimen *voucher* pada *database* GenBank menggunakan *software* MEGA versi 6.0.6. Hasil penelitian berdasarkan pendekatan morfologi menunjukkan bahwa spesimen yang diduga *Holothuria forskali* dari Pantai Timur Surabaya memiliki banyak kesamaan dengan *Havelockia versicolor*, sementara hasil berdasarkan pendekatan molekuler melalui analisis BLAST menunjukkan bahwa sekuen DNA spesimen memiliki identitas kesamaan sebesar 74% dengan spesimen *voucher* *Holothuria forskali* dan memiliki identitas kesamaan sebesar 75% dengan spesimen *voucher* *Havelockia sp.* pada *database* GenBank. Berdasarkan konstruksi pohon filogenetik, spesimen termasuk ke dalam famili Cucumariidae.

Kata kunci: COI, *Holothuria forskali*, *Havelockia versicolor*, Molekuler, Morfologi, Pantai Timur Surabaya, Taksonomi



Wilna Dwi Kurnia Anggun, 2016, Determining Taxonomy Position of *Holothuria forskali* in the Surabaya's East Coast Region Based on Morphology and Molecular Characteristic, this thesis under guidance by Prof. Dr. Bambang Irawan M.Sc. and Dr. Dwi Winarni M, Si. Departement of Biology, Faculty of Science and Technology, Universitas Airlangga, Surabaya.

ABSTRACT

*This research aimed to examine morphology characters and analyze genetic information from COI (Cytochrome oxidase subunit I) mitochondrial gene sequence of specimens which assumed as *Holothuria forskali* from Surabaya's East Coast region to identify and determine taxonomy position of scientific classification system. Specimens were taken from three coordinate points between S 07°17.235'E 112°15,084-S 07°13.905' E 112°45.569' in the Surabaya's East Coast Region, then put in a solution of MgCl₂ 7%, research specimens was described by shape of the body, color, diameter length, the body wall, the type of tentacle, the number of finger tentacle, calcareous ring and the ossicles shape. Based on molecular, DNA of research specimens was extracted, amplified using PCR, sequenced, and alignmented using Geneious version 9.0.4. COI sequences was analized using BLAST program to get the level of homology compared to voucher species sequence from GenBank. Then, a phylogenetic tree was reconstructed between DNA sequences of research specimen and some specimens voucher in the GenBank database using MEGA software version 6.0.6. Based on morphological approach, the result showed that the specimen which assumed as *Holothuria forskali* from Surabaya's East Coast region had many similarities with *Havelockia versicolor*. While the result based on molecular approach through the BLAST analysis showed that DNA sequence of specimen had in common identity of 74% with the voucher specimen of *Holothuria forskali* and had in common identity of 75% with the voucher spesimen of *Havelockia* sp. in the GenBank database. Based on the phylogenetic tree construction, the specimen belongs to the family of Cucumariidae.*

Keywords: *COI, *Holothuria forskali*, Molecular, Morphology, Surabaya's East Coast, Taxonomy*

