

Devi Oktafiani, 2015, Identifikasi Struktur Sel Gametogenik Teripang *Paracaudina australis* yang Hidup di Selat Madura, skripsi ini dibawah bimbingan Dr. Dwi Winarni, M.Si. dan Dr. Alfiah Hayati, Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui struktur sel gametogenik jantan dan betina pada berbagai tahap gametogenesis dan memprediksi tahap proses gametogenesis teripang *Paracaudina australis*. Pengamatan sediaan histologi berdasarkan tahap kematangan gonad dan jenis-jenis sel gametogenik. Sel yang diamati adalah sel oogenik dengan struktur utuh dan detail yang jelas dan dua sel tiap jenis spermatogenik dalam satu tubulus pada individu jantan. Analisis data dilakukan dengan mengelompokkan data berdasarkan jenis dan tahap kematangan. Uji *Duncan* dan *Brownforsythe* digunakan untuk mengetahui hubungan diameter oosit dengan tahap kematangan. Hasil penelitian menunjukkan bahwa sel oogenik berkembang dari dinding tubulus hingga lepas ke lumen. Oosit *previtellogenic* melekat pada dinding, *vitellogenic* telah lepas dari dinding dan *postvitellogenic* berada di lumen tubulus. Seiring perkembangannya sel oosit mengalami perubahan struktur yaitu bentuk sel dan inti, ukuran sel dan inti, letak dalam tubulus, kromatin, adanya sel folikuler, dan tebal *jelly layer*. Rata-rata diameter oosit *previtellogenic* pada tahap gametogenesis yaitu 20,24 μm , oosit *vitellogenic* pada tahap mature 91,1 μm , dan oosit *postvitellogenic* pada tahap *mature* 119,43 μm . Pengamatan sel spermatogenik dilihat dari bentuk dan ukuran sel spermatogenik, ada tidaknya flagel dan letak dalam tubulus. Hasil pengukuran dengan *Scanning Electron Microscope* didapat ukuran kepala spermatozoa 1,95 μm dan ekor 48,1 μm . Ukuran Hasil analisis hubungan diameter berbagai jenis sel oogenik memiliki beda pada tiap tahap kematangan gonad.

Kata Kunci: *Paracaudina australis*, gametogenesis, oosit *previtellogenic*, oosit *vitellogenic*, oosit *postvitellogenic*.

Devi Oktafiani, 2015, Identification of Gametogenic Cell Structure Sea Cucumber *Paracaudina australis* from Madura Strait, Indonesia, this thesis under the guidance of Dr. Dwi Winarni, M.Si. dan Dr. Alfiah Hayati, Biology Department of Faculty of Science and Technology, Universitas Airlangga, Surabaya.

ABSTRACT

This study was aimed to determine the structure of gametogenic cells at various stages of gametogenesis and predict stages of gametogenesis process sea cucumber *Paracaudina australis*. Histological preparations based observations of gonad maturity stages and types of gametogenic cells. Observation of oogenic cells with intact structure and clear detail and two of each type of spermatogenic cells in the tubules in male individuals. Data analysis was performed by grouping data based on the type and stage of maturity. Duncan and Brownforsythe test is used to determine the relationship of the diameter of oocytes with maturity stage. The results showed that oogenic cells grown from tubular wall to escape into the lumen. Previtellogenic oocytes attached to the wall, vitellogenic has separated from the wall and postvitellogenic located in the lumen. As it grows oocytes change their structure that form the cell and nucleus, nucleus and cell size, location in the tubules, chromatin, the presence of follicular cells, and thick of jelly layer. The average of diameter oocytes previtellogenic on gametogenesis stage is 20,24 μm , vitellogenic oocytes in the mature stage is 91,1 μm , and oocytes postvitellogenic at the mature stage is 119,43 μm . Observations of spermatogenic cells seen from the shape and size of spermatogenic cells, presence or absence of flagella and location in the tubules. The result by Scanning Electron Microscope obtained the size of spermatozoa head 1,95 μm and 48,1 μm in tail. The results of analysis relationship in diameter oogenic cell types have different at each stage of gonad maturity.

Key Word: Paracaudina australis, gametogenesis, oocytes previtellogenic, oocytes vitellogenic. oocytes postvitellogenic.