

Connectivity of *Scylla serrata* in Kenya and the Indian Ocean

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Abstract

Most of the studies conducted on the genetic population structure and gene flow of marine organisms have been focused on the genetic analysis of mitochondrial markers. Fratini et al. (2002, 2010) studied the genetic differentiation of *Scylla serrata* in the east African coast and found that the populations were genetically not homogenous. To better understand the population structure and the gene flow of *S. serrata* in and around the Indian Ocean, we propose to take more samples in Eastern Africa (Kenya) and to add more sequences from the entire Indian Ocean. The study area is located in the Southern part of the Kenyan coast. Samples were taken in Lamu Archipelago, Mida Creek, Kilifi, Mombasa, Gazi Bay and Shimoni. More samples were also received from South Africa, Madagascar, Zanzibar, Malaysia, Indonesia and China. On one hand, the results of this study will be compared with the results of Fratini et al. (2002, 2010) in order to determine boundaries of populations and verify whether those genetic patterns are stable over time at a local scale (e.g. in Kenya). In the first analysis, no significant differences have been reported between the three periods of sampling (2000, 2009 and 2011) which could mean that the patterns are stable over time. However tests of deviation from neutral molecular evolution seemed to indicate a departure from the neutral hypothesis for five of the six stations, which could involve population expansion or selection. Haplotype diversity show high values, unlike the nucleotide diversity, which could be a sign of a recent population expansion. Finally, the populations seem to be homogenous along the Kenyan coast and no structure has been detected. On the other hand, more samples from the wider Indian Ocean will be added into the database to better document the global geographic distribution (larger scale) of *S. serrata* around the Indian Ocean.

Keywords

mud crab, population genetics, connectivity, mitochondrial markers

References

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