

Genetic population structure of the blue starfish *Linckia laevigata* in the Western Indian Ocean

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The blue starfish *Linckia laevigata* is common on shallow water coral reefs of the Indo-West Pacific. Since *L. laevigata* is sedentary, long distance dispersal is only possible by their planktonic larval stage. Previous studies on population genetics of *L. laevigata* have indicated a high gene flow in the Great Barrier Reef and Philippines (Williams and Benzie, 1993; Juinio-Menez *et al.*, 2003). However, other studies report genetic breaks in populations of *L. laevigata* across the Indo-Malay Archipelago and between the Indian and Pacific Oceans (Williams and Benzie, 1998; Kochzius *et al.*, 2009). Only limited information on the genetic connectivity of this species is available for the Indian Ocean, showing genetic structuring between samples collected in South Africa and Thailand (Williams and Benzie, 1998). In the present study, partial sequences of the mitochondrial cytochrome oxidase I gene (COI) will be used as genetic marker. So far, 136 samples were collected from five sites in Kenya (Watamu, Kisite, Tenewi, Mombasa, and Diani) and two sites in Madagascar (Andilana and Sarodrano). It is planned to collect additional samples in Tanzania. The proposed study aims to investigate the genetic population structure and connectivity of *L. laevigata* in the Western Indian Ocean and comparing it to previous studies in the Indo-Malay Archipelago.

References

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