
Evolution of a marine invertebrate in urban coastal habitats

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Résumé

Understanding how species cope with anthropogenic changes of their habitat has become an important question in science. In the sea, marine species experience such modifications of their habitats in harbours and marinas, which differ from neighbouring natural habitats by multiple biotic and abiotic factors. In addition, harbours can artificially re-create some of the ecological gradients that are observed in the wild. In particular, man-made seawalls recreate the wave exposure gradients observed on natural marine shorelines. Urban coastal zones therefore provide interesting situations to study the adaptation of marine species to anthropogenic habitat modifications. Here, we studied the marine gastropod *Littorina fabalis*, a species that occurs in marinas and that, in its natural habitat, is divided into two ecotypes established along meter-scale wave exposure gradients. We sampled two transects covering populations established along an exposure gradient in both a natural and an anthropogenic site. We use this system to test whether responses to the anthropogenic gradient are similar to those found in nature and to look for genomic signatures of selection private to the urban environment. More precisely, we hypothesized that pre-existing adaptive genetic variation in wild population, notably at chromosomal inversions, has allowed rapid adaptation to the recent harbour environment.

Mots-Clés: Ecotype, Urban evolution, local adaptation, hybrid zone

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