VolkswagenStiftung

Doktorandenstipendium "Parallel evolutionary adaptation of gene expression in two marine angiosperm species, Zostera marina and Zostera noltii, in response to a geographic temperature cline"

Initiative: Evolutionsbiologie (beendet)

Bewilligung: 07.04.2009

Laufzeit: 3 Jahre

Local adaptations of plant populations to environmental gradients are a sign for fast microevolutionary divergence among populations, yet the underlying genetic basis is largely unresolved. In this project local plant adaptations of two closely related marine angiosperm species, Zostera marina and Zostera noltii, that occur along a pronounced thermal cline, will be assessed at the transcriptomic level. The transcriptomic response will be measured for defined genotypes subjected to heat stress experiments to allow for comparisons between genotypes within a population as well as between populations within and among species. The transcriptomic response will be assessed via assembly of ESTs collected using 454 pyrosequencing technology. The question addressed in this proposal is whether adaptation of the two closely related species collected from the same environmental conditions occurs in parallel. Furthermore the extend of the variation arising from neutral genetic drift or natural selection that is observed in the transcriptomic response within one species will also be quantified.

Projektbeteiligte

Dr. Susanne Franssen
Universität Münster
Institut für Evolution und Biodiversität
Evolutionäre Bioinformatik
Münster

Prof. Dr. Erich Bornberg-Bauer
Universität Münster
Fachbereich 13 Biologie
Institut für Evolution und Biodiversität
Münster