

Postdoktorandenstipendium "Evolutionary costs and benefits of trans-generational immune priming in a sex-role reversed fish"

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The transfer of genetic information across generations is a prerequisite of evolution. However, information can also be transferred to offspring non-genetically. Such transgenerational effects are particularly relevant in host-parasite interactions, where e.g. vertebrate mothers transfer antibodies to their offspring via eggs, blood or milk. Given the fitness costs and prevalence of parasites, such trans-generational immune priming may profoundly affect coevolutionary dynamics. Here the costs and interaction of transgenerational versus genetic determinants of parasite resistance will be studied in a fish with sex-role reversal. In the pipefish *Syngnathus typhle* males breed eggs in a placenta-like brood pouch. It is hypothesized that (i) under sex-role reversal males rather than females transfer antibodies or other immune components to the offspring. (ii) This should vary with the MHC genotype of parents. (iii) Immune priming is costly for parents, and it will be asked which costs offspring pay for immune activation. (iv) Under rapidly changing parasite genotypes of an abundant trematode parasite (*Cryptocotyle lingua*), immune priming is less beneficial than under a genetically constant parasite regime.

Projektbeteiligte

Dr. Olivia Roth

GEOMAR - Helmholtz-Zentrum für
Ozeanforschung Kiel
Marine Ökologie - Evolutionsökologie
Evolutionary Ecology of Marine Fishes
Kiel

Prof. Dr. Thorsten Reusch

GEOMAR - Helmholtz-Zentrum für
Ozeanforschung Kiel
FB 3: Marine Ökologie
Forschungseinheit Marine Evolutionsökologie
Kiel