



### Link

[Translate to English:]

Wendling, CC & Wegner, KM (2015) Adaptation to enemy shifts: rapid resistance evolution to local *Vibrio* spp. in invasive Pacific oysters, *PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES* 282: 20142244 [↗](#)

One hypothesis for the success of invasive species is reduced pathogen burden, resulting from a release from infections or high immunological fitness of invaders. Despite strong selection exerted on the host, the evolutionary response of invaders to newly acquired pathogens has rarely been considered. The two independent and genetically distinct invasions of the Pacific oyster *Crassostrea gigas* into the North Sea represent an ideal model system to study fast evolutionary responses of invasive populations. By exposing both invasion sources to ubiquitous and phylogenetically diverse pathogens (*Vibrio* spp.), we demonstrate that within a few generations hosts adapted to newly encountered pathogen communities. However, local adaptation only became apparent in selective environments, i.e. at elevated temperatures reflecting patterns of disease outbreaks in natural populations. Resistance against sympatric and allopatric *Vibrio* spp. strains was dominantly inherited in crosses between both invasion sources, resulting in an overall higher resistance of admixed individuals than pure lines. Therefore, we suggest that a simple genetic resistance mechanism of the host is matched to a common virulence mechanism shared by local *Vibrio* strains. This combination might have facilitated a fast evolutionary response that can explain another dimension of why invasive species can be so successful in newly invaded ranges.