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## Molecular genetic diversity and evolution at the MHC DQB locus in four species of pinnipeds.

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Variation was investigated at exon 2 (including part of the putative peptide-binding region) of the class II major histocompatibility complex (MHC) DQB locus for two congeneric phocid seal species and two congeneric otariid seal species. Polymorphism in one phocid species, the southern elephant seal (*Mirounga leonina*), was comparable to that seen in human populations, while the other phocid, the northern elephant seal (*Mirounga angustirostris*), has been through a severe population bottleneck and exhibited much less variation at this locus. A phylogenetic comparison of the four species was consistent with the trans-specific pattern of evolution described for other taxa at this locus, and relative nonsynonymous and synonymous substitution rates suggest the maintenance of polymorphisms by natural selection. A comparison of sequence patterns also suggested that some variation could have been generated through recombinational events, primarily within genera. These results suggest a pattern of evolution of the immune response in pinnipeds similar to that in terrestrial mammal species.

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