

Isolation and characterization of microsatellite markers in the queen scallop



Microsatellites are one of the most popular markers in genetic studies but typically they need to be isolated and characterized de novo for each species. In this work, a genomic library enriched for a trinucleotide motif was constructed to identify polymorphic microsatellite loci in *Aequipecten opercularis*, a scallop species commercially fished in Europe, and to examine the level of genetic variation and genetic differentiation in samples from Spain and Northern Ireland. Sequencing of 83 clones led to the identification of 30 microsatellite-containing sequences which showed often other repeated sequences. Five microsatellite loci were successfully amplified and found polymorphic. The number of alleles and the expected heterozygosity per locus ranged from 9 to 86 and 0.341 to 0.927, respectively, all localities showing similar levels of genetic variation (allelic richness, 13.164–15.487; expected heterozygosity, 0.527–0.638). Discrepancies in genotype proportions from Hardy-Weinberg equilibrium were observed in 11 out of 25 locality-locus combinations, a heterozygote deficiency occurring in all cases probably due to null alleles. Significant genetic differentiation was detected among *A. opercularis* from Northern Ireland, Fuengirola (southern Spain) and the homogeneous samples from northwest Spain. Isolation by distance was the most likely hypothesis to explain the differentiation detected.

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