

Novel microsatellite markers discovery in Patagonian toothfish (*Dissostichus eleginoides*) using high-throughput sequencing

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Abstract

Patagonian toothfish (*Dissostichus eleginoides*), is a sub Antarctic notothenioid fish key in the marine ecosystem that sustains fishery of higher commercial value in the world. However, there are a scarce knowledge or information about its population genetic background, product of the almost null information of molecular markers available for this species. Here, we use high-throughput sequencing technology (Illumina platform) to develop 1071 microsatellite loci, of which 22 loci were selected to evaluation. Polymorphism and genetic diversity of each locus was assessed in two locations distant by 2370 km. Considering both locations, a mean PIC value of 0.748 was estimated. Selected microsatellite loci showed among two to seventeen alleles by locus in the first location and two to twelve in the second. The observed heterozygosity varied from 0.18 to 0.91 and from 0.12 to 0.87 for the first and second location, respectively. While, the expected heterozygosity ranged from 0.15 to 0.92 and from 0.11 to 0.90. Three loci were monomorphic in only one location. Microsatellite markers developed here will be useful in future studies on conservation, fishery and population genetics of this species.

Keywords

Toothfish *Dissostichus eleginoides* Simple sequence repeat Microsatellite High-throughput sequencing

Electronic supplementary material

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Notes

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Author Contributions

SB & FL participated in the study designing and coordinating the experiments. JT collected samples and helped with genetic diversity analysis. LVC and AV helped collecting samples and helped writing the manuscript. PD, RA and AR helped with statistical analysis and corrected English writing. KKG participated in the study designing and coordinating, also helped with genetic analysis and manuscript drafting. RV participated in the study designing and coordinating, also helped with genetic analysis and manuscript writing. All authors critically read and approved the final manuscript.

Compliance with ethical standards

Conflict of interest

The authors declare no conflict of interest.

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Supplementary material

[11033_2019_4912_MOESM1_ESM.pdf](#) (295 kb)

Supplementary material 1 (PDF 295 kb)

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