Utility of five SSR markers for genetic diversity and paternity exclusion analysis in the patagonian toothfish

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The Patagonian toothfish or Chilean sea bass (Dissostichus eleginoides), found in the Southern Ocean surrounding Antarctica, is an important fishery species for Chile. This high-value species is regarded as overfished, making it an attractive target for aquaculture. When developing a reproduction program for any aquaculture species, it is important to implement genetic tools to evaluate diversity, inbreeding, and parentage. We calculated genetic diversity and paternity/maternity exclusion probabilities based on five commonly-used microsatellite loci in a natural population of Patagonian toothfish from southern Chile (n = 34) in order to evaluate the potential utility of these five markers in stock management. The observed number of alleles per locus (Na) and observed heterozygosities (HO) are within range as described by studies performed in other sub-Antarctic regions. All five loci were strongly polymorphic, with HO > 0.6 and Na