

Genetic identity of *Scombrops gilberti* between adult and juvenile populations from two different waters in the Pacific Ocean

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Gnomefish *Scombrops boops* and the closely related species *Scombrops gilberti* are distributed in the coastal waters around the Japanese Archipelago and represent two of only three or four known species worldwide of the genus *Scombrops*. Although both fish species are commercially important species in Japanese markets, the behavior of these species have not yet been clarified well. The previous report showed that *S. boops* is found in the waters in the Sea of Japan and Pacific Ocean although *S. gilberti* is in the narrow Pacific waters off Iwate Prefecture to those around the Izu Islands [1]. Interestingly, juveniles of *S. gilberti* were mainly observed in the waters off Iwate Prefecture, whereas their adults were caught from the waters around the Izu Islands. In this study, therefore, we investigated the genetic diversity in the populations of *S. gilberti* from the waters off Iwate Prefecture and around the Izu Islands, after species identification using PCR-RFLP analysis. Total genomic DNA was extracted from all the specimens. Partial mtDNA fragment including cytochrome *b* gene was amplified by PCR. The nucleotide sequence of PCR product was determined by direct sequencing analysis and haplotypes were analyzed by Clustal W. Additionally genetic structure was analyzed using Arlequin ver. 3.11 and TCS software. As the results, 18 and 19 haplotypes were detected from the populations of Iwate Prefecture and the Izu Islands, respectively. Haplotype diversity (h) and nucleotide diversity (π) in both populations showed close values as shown in Table 1. No significant difference based on the fixation index (F_{ST}) was observed in the populations between two waters ($F_{ST} = 0.00048$). These genetic parameters suggest that the populations in the waters off Iwate Prefecture (juvenile) was identical to those around the Izu Islands (adult).

Table 1. Comparison of the genetic parameters of *S. gilberti* between populations from the waters off Iwate Prefecture and around the Izu Islands

Population	No. of specimen	No. of haplotype	Haplotype diversity ($h \pm S.D.$)	Nucleotide diversity ($\pi \pm S.D.$)
Iwate Prefecture	30	18	0.943 ± 0.025	0.0033 ± 0.0019
Izu Islands	30	19	0.963 ± 0.018	0.0033 ± 0.0019

Reference

[1] Itoi, S., Odaka, J., Yuasa, K., Akeno, S., Nakajima, A., Suenaga, A., Noda, T., Akimoto, S., Myojin, T., Ikeda, Y., Masuda, Y., Takai, N., Yoshihara, K. and Sugita, H. 2010. Distribution and species composition of juvenile and adult scombroids (Teleostei, Scombroidae) in Japanese coastal waters. *J. Fish Biol.* 76: 369-378.