

Detection and identification of marine fish mislabeling in Guangzhou's supermarkets and sushi restaurants using DNA barcoding

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April 16, 2024

Abstract

In this study, DNA barcoding was applied to identify the exact species of fish products from Guangzhou supermarkets and sushi restaurants and to check if these products are correctly labeled. Different samples were analyzed using mitochondrial cytochrome C oxidase subunit I (COI) gene as the target. Our results showed that the CO I gene of all 139 samples examined were successfully amplified by PCR. However when sequenced, 30 samples (21.58%) were mislabeled, in which all the products labeled with “snapper” were actually the low-cost “tilapia”; 11 samples could not be identified (7.91%) and 4 samples failed (2.88%). We also found that the proper label for fish products in sushi restaurants was higher than that in supermarkets. As a simple, rapid and efficient technology, DNA barcoding can be widely used for species identification of fish products. Our work shows that regulation on the labelling of fish products in Guangzhou is needed.

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