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Absolute quantitative real-time PCR-based method for fish and fishery products authentication

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Fish has been part of our food since few hundred million years ago. Chinese even believe that eating fish head will make a child smarter, showing the great importance for fish to serve as an essential source of nutrients. The consumer can recognize fish when it maintains its complete profile but if it is cooked or processed, it is hard to do the identification. Unfortunately, fish adulteration causes fish recognition even harder. It is prevalent and risking the public health, whereby the risks include food poisoning, long-term health defects and so on. Therefore, quantitative real-time PCR (qPCR) has been devised in order to curb this issue. qPCR has been widely used due to numerous advantages such as high accuracy and high reliability. Compare to relative quantification, qPCR provides an absolute genome copy number for a specific target. Hence in this study, we developed a crucial real-time quantitative PCR for the detection of common edible fish species in Taiwan that are usually processed or adulterated. The genome of generic fish fragments was used as a standard, alongside with the design generic primers and probes for the fish, to calculate the genome copy number of fish. Finally, we demonstrated the efficacy of quantitative real-time PCR for the authentication of common edible fish and fishery products in Taiwan. In conclusion, this assay enables multiple fish species genome copy number being detected, which could be applied to detect adulterated foods and genetically modified foods in general.

Biography

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Notes:

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