



Molecular Diet Analysis of *Mycteroperca rubra*

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Abstract

The diet of the mottled grouper (*Mycteroperca rubra*) from eastern Mediterranean Sea, includes mostly of fishes, molluscs and crustaceans. In terms of the diversity of the species consumed by the mottled grouper, it is hard to determine the composition of their diet using morphological identification of prey from semi-digested stomach contents. DNA based prey identification is useful when the predator species are too small or remaining of the preys lacking parts for morphological examination. We demonstrate the use of DNA barcoding to conduct a molecular diet analysis of *M. rubra*. Dissections were performed in a sterilized laminar flow hood to avoid any type of contaminant DNA. Gut samples were homogenized and disrupted. After the homogenization process, samples were digested. DNA was extracted from these digested samples using commercial extraction kits and a blank extraction was conducted along with every DNA extraction as a negative control. Multiple tubes approach with triplicates was used in PCR process and sequenced consequently. Nucleotide sequences were compared with publicly available sequences downloaded from GenBank. A broad range of preys, mostly fish, were successfully identified at species level. Results indicate that molecular identification of prey species using the DNA extracted from the stomach content of *M. rubra* is a fast and effective tool in determination of predator-prey relationship.

Keywords:

Mycteroperca rubra, mottled grouper, stomach content, diet analysis, molecular identification
