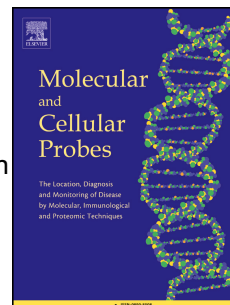


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# 1 Identification of four squid species by quantitative real-time 2 polymerase chain reaction

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12  
13 **Abstract:** Squids are distributed worldwide, including many species of commercial importance, and  
14 they are often made into varieties of flavor foods. The rapid identification methods for squid species  
15 especially their processed products, however, have not been well developed. In this study, quantitative  
16 real-time PCR (qPCR) systems based on specific primers and TaqMan probes have been established for  
17 rapid and accurate identification of four common squid species (*Ommastrephes bartramii*, *Dosidicus*  
18 *gigas*, *Illex argentinus*, *Todarodes pacificus*) in Chinese domestic market. After analyzing  
19 mitochondrial genes reported in GenBank, the mitochondrial *cytochrome b* (*Cytb*) gene was selected  
20 for *O. bartramii* detection, *cytochrome c oxidase subunit I* (*COI*) gene for *D. gigas* and *T. Pacificus*  
21 detection, *ATPase subunit 6* (*ATPase 6*) gene for *I. Argentinus* detection, and 12S ribosomal RNA (12S  
22 rDNA) gene for designing Ommastrephidae-specific primers and probe. As a result, all the TaqMan  
23 systems are of good performance, and efficiency of each reaction was calculated by making standard  
24 curves. This method could detect target species either in single or mixed squid specimen, and it was  
25 applied to identify 12 squid processed products successfully. Thus, it would play an important role in  
26 fulfilling labeling regulations and squid fishery control.

27  
28 **Key Words:** Species identification; Quantitative real-time PCR; Squid; Mitochondrial DNA

29  
30 **1. Introduction:**

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