

## Development of Loop-Mediated Isothermal Amplification for Detection of Garlic in Food

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**Abstract :** Garlic is used commonly as a seasoning around the world. But some people suffer from allergy to garlic. Garlic may also cause burning of mouth, stomach, and throat. In some Buddhist traditions, consuming garlic is not allowed. The objective of this study is to develop a LAMP based method for detection of garlic in food. We designed specific primers targeted on ITS1-5.8S rRNA-ITS2 sequence of garlic DNA. The LAMP assay was performed using a set of four different primers F3, B3, FIP and BIP at 60°C in less than 60 mins. Results showed that the primer was not cross-reactive to other commonly used spice including Chinese leek, Chinese onion, green onion, onion, pepper, basil, parsley, pepper and ginger. As low as 2% of garlic DNA could be detected. Garlic still could be detected by developed LAMP after boiled at 100°C for 80 minutes and autoclaved at 121°C for 60 minutes. Commercial products labeled with garlic ingredient could be identified by the developed method.

**Keywords :** garlic, loop-mediated isothermal amplification, processing, DNA

**Conference Title :** ICMBBB 2016 : International Conference on Molecular Biology, Biochemistry and Biotechnology

**Conference Location :** Tokyo, Japan

**Conference Dates :** May 26-27, 2016