Rapid and Sensitive Identification of the Herbal Tea Ingredient *Taraxacum formosanum* Using Loop-Mediated Isothermal Amplification

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**ABSTRACT**

*Taraxacum formosanum* (TF) is a medicinal plant used as an important component of health drinks in Taiwan. In this study, a rapid, sensitive and specific loop-mediated isothermal amplification (LAMP) assay for authenticating TF was established. A set of four specific LAMP primers was designed based on the nucleotide sequence of the internal transcribed spacer 2 (ITS2) nuclear ribosomal DNA (nrDNA) of TF. LAMP amplicons were successfully amplified and detected when purified genomic DNA of TF was added in the LAMP reaction under isothermal condition (65 °C) within 45 min. These specific LAMP primers have high specificity and can accurately discriminate *Taraxacum formosanum* from other adulterant plants; 1 pg of genomic DNA was determined to be the detection limit of the LAMP assay. In conclusion, using this novel approach, TF and its misused plant samples obtained from herbal tea markets were easily identified and discriminated by LAMP assay for quality control.

**Keywords:** *Taraxacum formosanum*; medicinal plant; internal transcribed spacers 2 (ITS2); loop-mediated isothermal amplification

**REFERENCES**


