

**ISOLATION OF PCR AMENABLE DNA FROM PROCESSED SANDALWOOD
SAMPLES FOR MOLECULAR AUTHENTICATION**

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Sandalwood (*Santalum album* L.) is a highly prized commercial plant species appreciated worldwide for its sweet, persistent aroma. Due to its scarcity and high prices in the market, sandalwood is adulterated with plant sources similar in appearance or fragrance during the trade. This has health implications for end-users, owing primarily to their use as herbal drugs. Highly dried and processed samples of sandalwood products available on the market pose difficulties in using morphological methods of adulterant detection. Chemical detection methods of chemo-profiling fail when the chemical composition of plants is affected by environmental variations and the close genetic relationship of plants. The application of molecular tools provides promising ways of standardization over physical and chemical methods for adulterant detection. DNA barcoding combined with High-Resolution Melting (Bar-HRM) is a novel technique for detecting adulterants. We aimed to develop a robust molecular tool using the Bar-HRM to detect sandalwood adulteration. Towards this end, DNA isolation from heartwood samples is extremely challenging due to the low amounts of preserved DNA within the heartwood. We successfully developed a modified CTAB protocol for PCR amenable DNA extraction from the available market samples of sandalwood. The CTAB method was modified by extending the incubation period of the sample with the buffer at 65 °C to 2 h to release more DNA, and overnight incubation for DNA precipitation at -20 °C with a sodium acetate mixed isopropanol solution. The isolated DNA gave the desired PCR bands with universal primers for the *rbcL* gene region. The ‘uMELT’ simulated melting profile for the designed DNA barcodes for sandalwood and its adulterants produced expected differentiated curves, affirming the success of the project being developed. The current results warrant further studies on running High-Resolution Melting (HRM) analysis to authenticate sandalwood from its adulterants.

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