Want to detect hepatotoxic *Cassia* adulteration in your *Cinnamon?*

PCR and SNP based barcoding method for detection of cassia adulteration in cinnamon

Cinnamon, the inner bark of the tree of *Cinnamomum verum* (*C. zeylanicum*) referred as the "true cinnamon" is the most important commercial product of the cinnamon tree traded in the form of quills, featherings, chips and powder. It is an important condiment in food industry as it is used in the preparation of chocolates, biscuits, desserts, teas, cocoa, soups, pickles, beverages etc. Apart from its use as a spice it is also employed in medicinal and cosmetic industries.

Due to the high cost and value of true cinnamon, it is invariably adulterated with rougher, thicker, cheaper and less aromatic bark of *C. cassia* (syn. *C. aromaticum*) characterized by a bitter and burning flavor. Our studies indicate adulteration in seven out of 10 market samples of traded cinnamon. *C. cassia* barks contain coumarin (1%), a class of compounds that contain 1, 2-benzopyrone structures that is present only in trace amounts in *C. verum* barks (0.04%). **The hepatotoxic effects of coumarin in animals and sensitive individuals have imposed restrictions in the use of coumarin by Food Safety Regulatory Agencies of different countries.**

Identification of true cinnamon from *C. cassia* based on the physical appearance is difficult and the situation becomes more complicated once it is processed into powder form or as value added products. We have developed a PCR cum SNP based barcoding technique to detect *C. cassia* adulteration from traded cinnamon samples.

C. verum

C. cassia

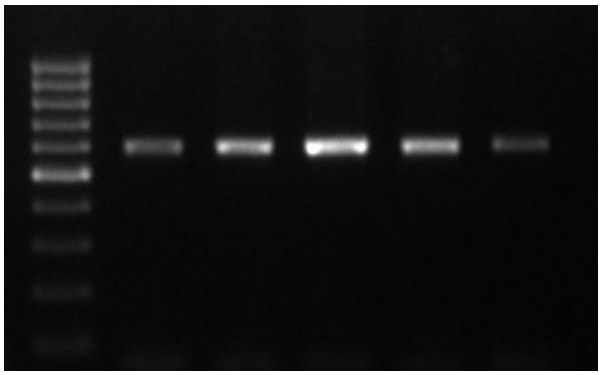

Fig. A representative PCR gel showing amplification of barcoding loci in Cinnamomum samples

- **Cost of analysis/sample: Rs. 5000/- plus service tax @15%**
- **We require only 20 grams of powdered sample for analysis.**
- **Results will be delivered in 2 weeks.**

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