Timber is an important source of income for many tropical countries. The tropical forests are also the livelihood of local and indigenous people, and contain a unique biodiversity. In addition, a lot of tropical timber has aesthetic qualities and great strength (1). Traceability is defined according to the standard ISO 9000/2005 as the ability to determine the geographical origin of timber by avoiding impregnation with preservatives, etc. In addition, a lot of tropical timber has aesthetic qualities and great strength (1). Traceability is defined according to the standard ISO 9000/2005 as the ability to determine the geographical origin of timber by avoiding impregnation with preservatives, etc. In addition, a lot of tropical timber has aesthetic qualities and great strength (1). Traceability is defined according to the standard ISO 9000/2005 as the ability to determine the geographical origin of timber by avoiding impregnation with preservatives, etc.

DNA extraction from fungi, we created a new protocol which takes into account the method of El Sheikha et al. (3). The efficiency of this protocol is suitable to extract the genomic DNA from all fungal species in a unique step without using purification kits and it is performed on a large number of samples in one analysis. Physical, chemical and enzymatic cell wall disruption and optimal extraction was achieved by incorporating acid washed glass beads, lysis buffer and enzymatic digestion step. DNA quality was confirmed by the successful PCR amplification which used for the first time a universal primer to amplify all fungal species in a unique PCR. The PCR products were analyzed by DGGE by using a Bio-Rad DcodeTM universal mutation detection system (Bio-Rad Lab., USA) using the procedure described by El Sheikha et al. (3).

Efficiency of the new protocol for the extraction of fungi DNA from tropical timber. DNA extraction of the fungal community was done on the tropical timber samples using our new protocol which achieved admirable success (Fig 1).

Verification of the PCR amplification of the extracted DNA, fungal DNA was amplified by our novel PCR conditions. All of the bands were clearly observed (Fig 2).

DGGE pattern, the observed bands had sufficient intensities to analyze samples of fungal DNA extracted from tropical timbers from four various geographical areas (Fig 3).

Clusters and factorial correspondence analysis, we can observe clearly that the differences between the geographical locations depend on the diversity of the fungal communities of timber samples (Fig 4, 5).

We created a new molecular tool to assure the determination of geographical origin of timbers. The analysis of tropical timber fungal communities by PCR-DGGE could be applied to differentiate geographical locations and provide a unique biological bar code for timbers which make it possible to trace back the timbers to their original locations.