

Evaluation of extracts of *Piper sarmentosum* for accelerated stability by metabolomic fingerprint profiling

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ABSTRACT

Unlike pharmaceuticals, precise stability assessment of herbal products is challenging because of their complex nature. A new trend in natural products is that the extract is considered active as a whole whether active constituents are known or not. Hence, the stability of all the constituents must be taken into account, which is possible by analyzing metabolomic fingerprint profiles. Therefore, present study aimed to evaluate ethanol extracts of fruit of *Piper sarmentosum*, an important medicinal plant, for accelerated stability using metabolomic fingerprint profiling. The extract was exposed to three storage conditions of different temperature and humidity and analyzed at 0, 1, 2, 4 and 6 months by Fourier transform infrared (FTIR) spectroscopy and high performance thin layer chromatography (HPTLC) to get metabolomic fingerprints. FTIR fingerprints in combination with chemometrics indicated the changes in metabolomics, stirring with the passage of time at all storage conditions. Visual inspection of HPTLC densitograms revealed metabolomic changes in the extracts stored for 6 months at 60 degC and 85% relative humidity. The results of the study indicate that the products made from this plant ought to be stored at room temperature, below 30 degC and 45% relative humidity, and excessive heating must be avoided during manufacturing process. Moreover, the method may be used by natural product industry as a tool of identification, classification and discrimination (ICD).

KEYWORDS

Piper sarmentosum; Piperaceae . Stability . Metabolomic fingerprint profiling

REFERENCES

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