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Analysis of amide compounds in different parts of Piper ovatum Vahl by high-performance liquid chromatographic

Daniel R. Silva, Mislaine A. Brenzan, Lauro M. Kambara, Lucia E. R. Cortez, Diogenes A. G. Cortez
Graduate Program in Pharmaceutical Sciences

ABSTRACT

Background Piper ovatum (Piperaceae) has been used in traditional medicine for the treatment of inflammations and as an analgesic. Previous studies have showed important biological activities of the extracts and amides from P. ovatum leaves. Objective In this study, a high-performance liquid chromatographic (HPLC) method was developed and validated for quantitative determination of the amides in different parts of Piper ovatum. Materials and Methods The analysis was carried out on a Metasil ODS column (150 x 4.6 mm, 5 m) at room temperature. HPLC conditions were as follows: acetonitrile (A), and water (B), 1.0% acetic acid. The gradient elution used was 0-30 min, 0-60% A; 30-40 min, 60% A. Flow rate used was 1.0mL/min, and detection at 280nm. Results The validation using piperlonguminine, as the standard, demonstrated that the method shows linearity (linear correlation coefficient = 0.998), precision (relative standard deviation <5%) and accuracy (mean recovery = 103.78%) in the concentration range 31.25 - 500 g/mL. The limit of detection and quantification were 1.21 and 4.03 g/mL, respectively. This method allowed the identification and quantification of piperlonguminine and piperovatine in the hydroethanolic extracts of P. ovatum obtained from the leaves, stems and roots. All the extracts showed the same chromatographic profile. The leaves and roots contained the highest concentrations of piperlonguminine and the stems and leaves showed the most concentrations of piperovatine. Conclusion This HPLC method is suitable for routine quantitative analysis of amides in extracts of Piper ovatum and phytopharmaceuticals containing this herb.

KEYWORDS

High-performance liquid chromatographic . Piper ovatum . piperlonguminine . piperovatine . validation

REFERENCES