

Quality Control of *Baccharis trimera* (Less.) DC. (Asteraceae) Hydroalcoholic Extracts

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SUMMARY. The aerial part of *Baccharis trimera* (Less.) DC. (Asteraceae), used as the raw material for the preparation of phytotherapeutic drugs, was analysed by botanical, chemical, physico-chemical and technological methods. An hydroalcoholic extract was developed and its quality was compared to an aqueous extract by physico-chemical and sensory tests. Paper, thin-layer, vacuum liquid and high performance liquid chromatography were employed in order to determine the quality of the extracts. For these purposes, eupatorin and 3-O-methyl-querctin were used as markers. With the exception of paper chromatography, the other chromatographic techniques proved to be adequate quality control methods for evaluation of *Baccharis trimera* extracts.

RESUMEN. "Control de calidad de extractos hidroalcohólicos de *Baccharis trimera* (Less.) DC. (Asteraceae)". La parte aérea de *Baccharis trimera* (Less.) DC. utilizada como materia prima vegetal en la preparación de productos fitoterápicos, fue analizada por métodos botánicos, químicos, físicoquímicos y tecnológicos. Se preparó el extracto hidroalcohólico y se comparó su calidad con la de un extracto acuoso, a través de ensayos sensoriales y físicoquímicos. Para determinar la calidad de los extractos se empleó cromatografía en papel, en capa fina, líquida al vacío y líquida de alta resolución, utilizándose como sustancias marcadoras la eupatorina y la 3-O-metilquerctina. Con excepción de la cromatografía en capa fina, el resto de las técnicas cromatográficas mencionadas demostraron ser adecuadas para el control de la calidad de extractos de *Baccharis trimera*.

INTRODUCTION

Baccharis trimera (Less.) DC. (Asteraceae), known as "carqueja", is used widely in Brazil and neighbouring countries for both nutritional and medicinal purposes, either as industrialised products or as popular herbal preparations. *B. trimera* shows hepatoprotective ¹, antiviral ² and anti-inflammatory activities ³. Its effects on glycaemia and insulinaemia levels were tested by Bragança ^{4,5}.

The presence of flavonoids has been reported by several authors ⁶⁻⁸. The plants also contain *ent*-clerodan ^{6,7} and *neo*-clerodan ⁹ diterpene lactones, tetra-*nor*-diterpene lactones ⁸, and a volatile oil consisting of carquejol ^{10,11}, carquejil acetate, canphene, and α - and β -pinene ¹².

Although the Brazilian pharmaceutical market includes several products containing the iso-

lated drug or its extracts ¹³, there are almost no published results of studies concerning production and quality control aspects and aimed at development of a phytotherapeutic product, as presently defined in Brazil ¹⁴. The single exception is Mello ¹⁵, who has developed quality control techniques covering the entire processing cycle of hydroalcoholic extracts of the aerial parts of *B. trimera*, and has also evaluated the effect of several production factors on the characteristics of the extractive solutions.

In view of the lack of such information, the present work presents some considerations and results regarding the quality evaluation of *B. trimera*, not only as pharmaceutical raw material, but also during the technological development of its derived products.

PALABRAS CLAVE: Asteraceae, *Baccharis trimera*, Control de Calidad, Métodos Cromatográficos, Tecnología.

KEYWORDS: Asteraceae, *Baccharis trimera*, Chromatographic methods, Quality control, Technology.

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