Determination of Lipid Profile of *Cereus peruvianus* Mill. (Cactaceae) by gas chromatography

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**INTRODUCTION:** *Cereus peruvianus* is a source of polysaccharides with potential industrial applications: flocculation of impurities from water, wastewater treatment in the paper industry and production of polyelectrolytes. It is popularly used to reduce the level of total cholesterol, LDL and cardiovascular disease risk. The goal was to identify and quantify fatty acids obtained from *C. peruvianus* by gas chromatography.

**MATERIAL AND METHODS:** After lyophilization of the plant material, the lipids were extracted by two maceration cycles of 24h with isopropanol and chloroform-methanol (2:1 v/v), respectively. The lipid classes (neutral lipids, glycolipids and phospholipids) were separated by column chromatography (CC) by elution solvents: chloroform, acetone and methanol. Fatty acids were identified and characterized by GC.

**DISCUSSION AND RESULTS:** The yield of fatty acids was 4.56% in the crude extract, 0.55% in neutral lipids, glycolipids 0.41% and 1.25% in the phospholipids. According to Motta, 2011, phospholipids are present in several cell structures and have many functions besides preventing water loss, therefore, their concentration is higher than that of other lipid classes. The GC analysis showed that the nervonic acid (C24:1) was the major component (20.93%) in the fraction of neutral lipids. In glycolipids, alpha-linolenic (C18: 3n3) and gamma-linolenic (C18: 3n6) fatty acids were present in higher concentration with 32.58% and 16.74%, respectively. In phospholipids, the palmitic fatty acid (C16: 0) was the major component (36.67%). In the crude extract of the plant there was prevalence of alpha-linolenic acid (26.02%) and gamma-linolenic acid (18.24%), defining the lipid profile of *C. peruvianus* as rich in unsaturated fatty acids. MAYWORM and colleagues (1996) characterized the oil extracted from the seeds of *Cereus jamacaru* and the results were similar to those of the present study.

**CONCLUSION:** The lipids from Mandacaru may have large clinical and economic application, associated to the presence of unsaturated fatty acids.

Keywords: Lipids, *Cereus peruvianus* Mill., gas chromatography.
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