

Extraction Factorial Design Evaluation of *Sideroxylon obtusifolium* Bark Lectin

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Sideroxylon obtusifolium, plant popularly known as *quixabeira* is an abundant species in the Caatinga Region of Northeastern Brazil. This species is widely used in popular medicine for its astringent, tonic, anti-diabetic and healing properties. The use of a statistical planning is justified in the evaluation of appropriate biochemical methods to minimize the expense of biological material, optimize the time and ensure high-reliability statistical results (95%). Considering the great medical value of *S. obtusifolium* this study aims to determine through a factorial design the best extraction conditions for *S. obtusifolium* bark lectin. A full factorial design (2⁴) was used, which was evaluated in four independent variables: pH values (6.0, 7.0 and 8.0); NaCl concentrations (distilled water, 0,075 M and 0.15 M), time (4, 8 and 16 h) and temperature (4, 24 and 40 °C) of extraction. The lectin activity was evaluated through specific hemagglutinating activity (SHA) in each extract. The results showed that temperature (4° C) was the best variable, showing significant effects for SHA, followed by time (4 h), pH (8.0) and addition of NaCl (0.15 M). The obtained results revealed that the factorial design was an efficient technique to help the determination of the best conditions for lectin extraction. The steps followed, with the best settings, will help in *S. obtusifolium* lectin investigation.

Keywords: extraction, factorial design, *Sideroxylon obtusifolium*, bark lectin.
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