

Enzymatic Analysis of *Salvia hispanica* Seed Extracts

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INTRODUCTION: *Salvia hispanica* L. (chia), is a species native of Mesoamerica and grows in arid and semiarid regions. The protein content of the seeds (19-23%) is higher than the content found in traditional grains, showing a great potential to be explored. However, up to now the proteins of chia seeds have not been sufficiently studied and characterized. **OBJECTIVE:** This study aimed to identify the presence of hydrolases and peroxidases in chia seed extracts, generating information leading to a wider use of these macromolecules. **MATERIAL AND METHODS:** Chia seeds were submitted to mucilage removal, milling and delipidation processes. To determine the protease and peroxidase activities, seed proteins from *S. hispanica* were extracted in Tris-HCl buffer (1:10), pH 8.0, 500 mM NaCl for 4h at 4°C. To determine chitinase and β -1,3 glucanase activities, the proteins were extracted in 50 mM sodium acetate buffer (1:10), pH 5.2 for 4h at 4°C. **RESULTS AND DISCUSSION:** The extracts obtained in Tris-HCl buffer presented a protein content of 14.89 ± 0.82 mg/mL, higher than the content obtained after extraction in acetate buffer (2.50 ± 0.70 mg/mL). The electrophoretic profile (SDS-PAGE 12.5%) in non-reducing conditions observed for both extracts presented bands of molecular weights of 20.1 kDa and 45.0 kDa. The extract obtained in Tris-HCl buffer showed protease (15.23 ± 0.38 UAP/mg) and peroxidase activities (15.0 ± 0.1 UA/mg). For the extract obtained in acetate buffer, β -1,3 glucanase (1.04 ± 0.0009 nanokat/mg) and chitinase activities ($374,948.30 \pm 3,615.98$ nanokat/mg) were also detected. **CONCLUSION:** The results show that chia seeds may be used as a source of enzymes of biotechnological interest.

Keywords: *Salvia hispanica*, seed proteins, proteases.

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