

Identification of alkaloids direct from leaves of *Annona rugulosa* by DESI-HRMS

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Abstract. The *Annona rugulosa* (Schltdl.) H.Rainer is a native fruitful tree, found in South and Southeast of Brazil [1]. It is commonly known as “*araticum-de-porco*”, “*araticum-verde*” and “*annoná*”. In popular medicine, the infusion from leaves is used against kidney pain and throat infections [2]. Previous report of chemical composition of *A. rugulosa*, have been identified thirteen alkaloids from ethanolic extract of leaves [3]. The alkaloids have several biological activities, such as antioxidant, antimicrobial and cytotoxic activities [4-5]. This work aimed the use of Desorption Electrospray Ionization High Resolution Mass Spectrometry (DESI-HRMS) technique to identify alkaloids directly in leaf tissue from *A. rugulosa*. The DESI is a member of ambient ionization sources, in which a spray of charged droplets is directed to the sample surface, where the ionization and desorption of the analytes occurs. The leaves were collected in November 2014, in Curitiba, Paraná, Brazil. The leaves were dried at ambient temperature and submitted to two different procedures: firstly, a methanolic extract was prepared and added to an Omni Slides™ Hydrophobic Substrates (Prosolia Inc., Indianapolis, USA); the second procedure, the whole leaf was scanned. All analysis were performed with a DESI 2D source provided by Prosolia, Inc. (Indianapolis, USA) coupled with a mass spectrometer Q Exactive™ Hybrid Quadrupole-Orbitrap provided by Thermo Scientific (Waltham, USA). In both fingerprint analyses were identified (mass error <5 ppm) the following for alkaloids: anonaine (m/z 266.11735 [M+H]⁺), nornantenine (m/z 326.13818 [M+H]⁺), N-nornuciferine (m/z 282.14859 [M+H]⁺), xylopin/lanuginosine (m/z 296.12782 [M+H]⁺), norisocorydine/isoboldine (m/z 328.15394 [M+H]⁺), listeferine (m/z 312.12271 [M+H]⁺), asimilobine (m/z 268.13299 [M+H]⁺), liriodenine (m/z 276.06601 [M+H]⁺), magnococline/N-methylcoclaurine (m/z 300.15929 [M+H]⁺) and reticuline (m/z 330.16955 [M+H]⁺). all compounds. According to that, DESI-HRMS was proved to be a high-throughput technique with high sensitivity and specificity, without or minimum sample preparation.

References:

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