

First Approach to Unveiling the Antidiabetic Potential of *Agave Potatorum*: A -Glucosidase Inhibition and Phytochemistry

Nahum Galindo-Vargas¹, Edgar García-Sánchez², Elia Donají Juárez-Niño¹, Patricia A. Santiago-García², Delia Soto-Castro^{2*}

¹Instituto Politécnico Nacional, CIIDIR Unidad Oaxaca, Hornos 1003, 71230, Santa Cruz Xoxocotlán, Oaxaca, México.

²CONAHCyT-Instituto Politécnico Nacional, CIIDIR Unidad Oaxaca, Hornos 1003, 71230, Santa Cruz Xoxocotlán, Oaxaca, México.

***Corresponding author:** Delia Soto-Castro, email: dsotoc@ipn.mx; Tel: (951) 517 0610 Ext. 82740.

Received April 23rd, 2024; Accepted July 29th, 2024.

DOI for the article: <http://dx.doi.org/10.29356/jmcs.v69i2.2258>

Supplementary Information

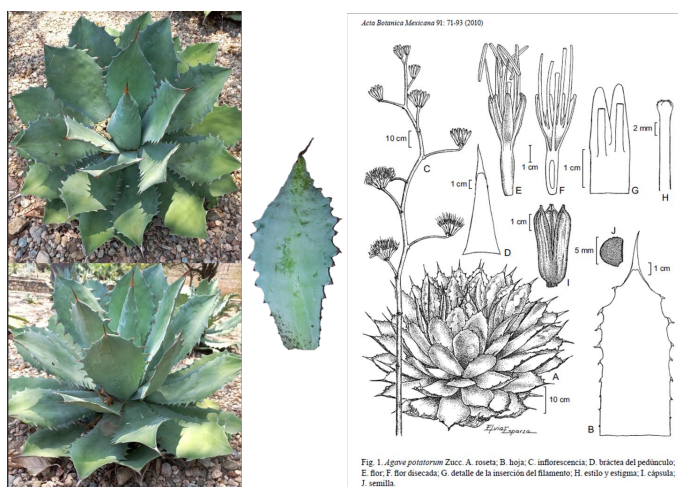


Fig. S1. Photos of *Agave potatorum* plant compared to the illustration of García-Mendoza, 2010. (García-Mendoza, A. J. Taxonomic review of the *Agave potatorum* Zucc complex. (*Agavaceae*): new taxa and neotypification. *Acta Botánica Mexicana*. 2010, 91, 71-93.)



Fig. S2. Cutting and drying process of *A. potatorum* Zucc. leaves from 1 to 8 years old.

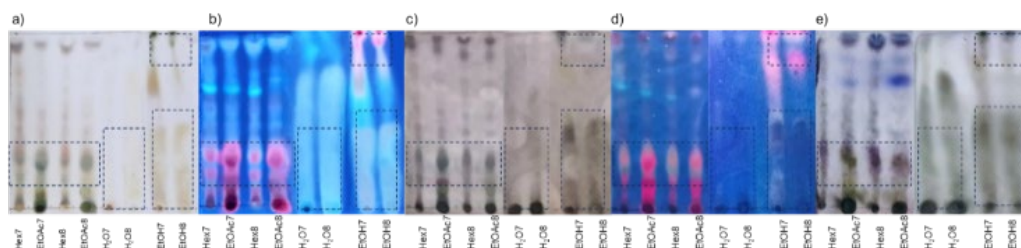


Fig. S3. Terpene compounds test on eluted extracts of 7- and 8-year-old *A. potatorum* leaves. (a) Liebermann-Buchard test at visible light and (b) 365 nm UV light; (c) vanillin-phosphoric acid test at visible light and (d) 365 nm UV light; (e) vanillin-sulfuric acid at visible light. Boxes indicate zones of inhibition of the extracts on α -glucosidase.

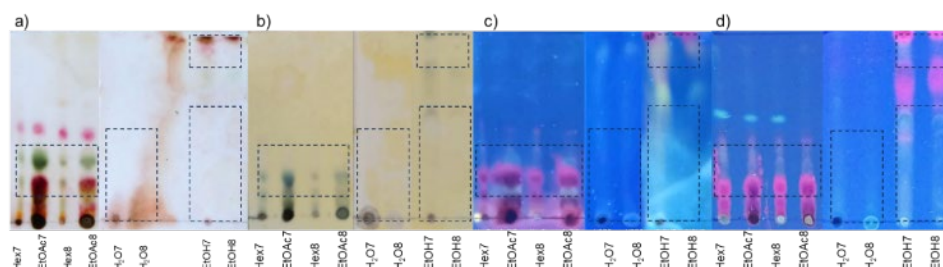


Fig. S4. Phenolic compounds tests on eluted extracts of 7- and 8-year-old *A. potatorum* leaves. At visible light **(a)** fast blue B salt and **(b)** ferric chloride (FeCl_3) tests, at 365 nm UV light **(c)** natural products reagent (NP-PEG), and **(d)** hydroxide potassium (KOH) tests. Boxes indicate zones of inhibition of the extracts on α -glucosidase.

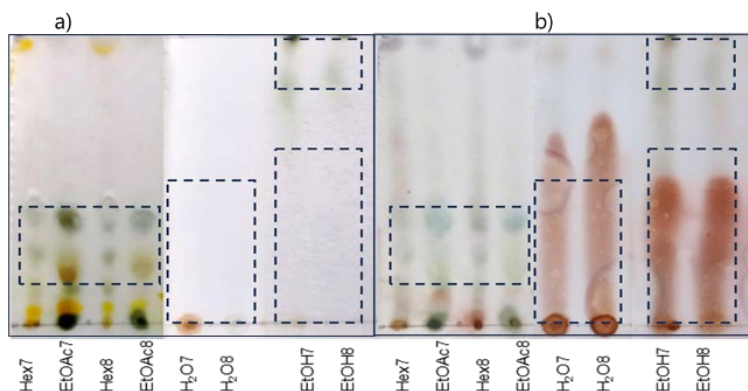


Fig. S5. Diphenylamine-aniline TLC test on eluted extracts of 7- and 8-year-old *A. potatorum* leaves sprayed with **(a)** diphenylamine solution and **(b)** with the aniline solution after heated at 80 °C for 5 minutes. Boxes indicate zones of inhibition of the extracts on α -glucosidase.

Table S1. Infusion extraction yield of *A. potatorum* leaves from 1 to 8 years old.

Age of agave (years)	Yield (%)
1	35.0
2	24.5
3	27.3
4	37.5
5	30.5
6	39.7
7	28.1
8	42.3