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### Characterization of main primary and secondary metabolites and in vitro antioxidant and antihyperglycemic properties in the mesocarp of three biotypes of Pouteria lucuma.

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Abstract

Pouteria lucuma is an Andean fruit from pre-Incas' times highly appreciated due to its characteristic flavor and taste in its homeland. We characterized the primary (e.g., sugars and organic acids), and secondary (e.g., phenolics and carotenoids) and in vitro antioxidant and antihyperglycemic properties of Rosalia, Montero and Leiva 1 lucuma biotypes. Significant differences were found in these metabolites and functional properties related to biotype and ripeness stage. Results showed significant amounts of sugars (119.4-344 mg total sugars g(-1)DW) and organic acids (44.4-30.0 mg g(-1)DW) and functional associated compounds such as ascorbic acid (0.35-1.07 mg g(-1)DW), total phenolics (0.7-61.6 mg GAE g(-1)DW) and total carotenoids (0.22-0.50 mg β-carotene g(-1)DW). Important in vitro antioxidant and antihyperglycemic properties were found and provide the base for the standardization of lucuma harvest and postharvest focused not only on the enhancement of sensory but functional properties.

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**KEYWORDS:** Antihyperglycemia; Carotenoids; Organic acids; Phenolic compounds; Sugars

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