

Format: Abstract

Send to

J Med Food. 2009 Apr;12(2):278-91. doi: 10.1089/jmf.2008.0113.

Evaluation of antihyperglycemia and antihypertension potential of native Peruvian fruits using in vitro models.

Pinto Mda S¹, Ranilla LG, Apostolidis E, Lajolo FM, Genovese MI, Shetty K.

Author information

Abstract

Local food diversity and traditional crops are essential for cost-effective management of the global epidemic of type 2 diabetes and associated complications of hypertension. Water and 12% ethanol extracts of native Peruvian fruits such as Lucuma (*Pouteria lucuma*), Pacae (*Inga feuille*), Papayita arequipeña (*Carica pubescens*), Capuli (*Prunus capuli*), Aguaymanto (*Physalis peruviana*), and Algarrobo (*Prosopis pallida*) were evaluated for total phenolics, antioxidant activity based on 2, 2-diphenyl-1-picrylhydrazyl radical scavenging assay, and functionality such as in vitro inhibition of alpha-amylase, alpha-glucosidase, and angiotensin I-converting enzyme (ACE) relevant for potential management of hyperglycemia and hypertension linked to type 2 diabetes. The total phenolic content ranged from 3.2 (Aguaymanto) to 11.4 (Lucuma fruit) mg/g of sample dry weight. A significant positive correlation was found between total phenolic content and antioxidant activity for the ethanolic extracts. No phenolic compound was detected in Lucuma (fruit and powder) and Pacae. Aqueous extracts from Lucuma and Algarrobo had the highest alpha-glucosidase inhibitory activities. Papayita arequipeña and Algarrobo had significant ACE inhibitory activities reflecting antihypertensive potential. These in vitro results point to the excellent potential of Peruvian fruits for food-based strategies for complementing effective antidiabetes and antihypertension solutions based on further animal and clinical studies.

PMID: 19459727 DOI: 10.1089/jmf.2008.0113

[PubMed - indexed for MEDLINE]



Publication Types, MeSH Terms, Substances

LinkOut - more resources

PubMed Commons

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)

Full text links

Mary Ann Liebert,

Save items

Add to Favorites

Similar articles

Evaluation of indigenous grains from the Peruvian Andean region for a [J Med Food. 2009]

Potential of cranberry powder for management of hyperglycemia using in vitro r [J Med Food. 2010]

Antidiabetes and antihypertension potential of commonly consumed carbohy [J Med Food. 2008]

Review Screening of antidiabetic and antioxidant activities of medic [J Integr Med. 2015]

Review Traditional uses, phytochemistry and pharmacology of Ci [Asian Pac J Trop Med. 2012]

[See reviews...](#)

[See all...](#)

Cited by 8 PubMed Central articles

The anti-inflammatory and analgesic properties of prosopis chile [Int J Health Sci (Qassim). 2015]

Influence of drying temperature on dietary fibre, rehydration properties. [J Food Sci Technol. 2015]

Renoprotective effect of Egyptian cape gooseberry fruit (PI [ScientificWorldJournal. 2014]

[See all...](#)

Related information

Articles frequently viewed together

PubChem Compound

PubChem Compound (MeSH Keyword)

PubChem Substance

Cited in PMC

Recent Activity