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Dereplication of antidiabetic compounds of punica granatum

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Abstract

Punica granatum (pomegranate) which is cultivated worldwide has many health benefits, including antidiabetic properties. Local *P. granatum* fruit differs from the imported ones in terms of the outer appearance, taste and bioactive composition. Despite of the less attractive appearance, local *P. granatum* has been reported to have better antidiabetic properties. However, there is limited study on the identification of antidiabetic compounds derived from local *P. granatum*. This research aimed to identify targeted putative antidiabetic compounds derived from local *P. granatum* peel. The extraction of local *P. granatum* peel used methanol as the extraction solvent. The crude extract was subjected directly to ESI-MS and NMR to screen for the targeted antidiabetic compounds. From dereplication analysis using ESI-MS, punicalagin, ellagic acid, gallic acid, oleanolic acid and ursolic acid were detected in the negative mode whereas punicalin was detected in the positive mode. Punicalagin and vanoleic acid dilactone was identified using NMR analysis by comparing to reference compound with other literature. Punicalagin, punicalin, ellagic acid, gallic acid, oleanolic acid and ursolic acid were dereplicated in this study. This study could give putative identification of antidiabetic compounds derived from *P. granatum*. © 2020, Advanced Scientific Research. All rights reserved.

Author Keywords

Medicinal Properties; Natural Sources; Treatment of Diabetes

Index Keywords

antidiabetic agent, ellagic acid, ellagitannin, gallic acid, glucose, hydrogen, oleanolic acid, pomegranate extract, punicalagin, punicalin, tannin, unclassified drug, ursolic acid, valoneic acid dilactone; Article, Dereplication, diabetes mellitus, drug screening, electrospray mass spectrometry, enzyme inhibition, fruit peel, glucose blood level, insulin release, mass spectrometry, nonhuman, pomegranate, proton nuclear magnetic resonance

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