Identification of antioxidative flavonols and anthocyanins in Sicana odorifera fruit peel

Abstract:
Ten flavonols and three anthocyanins were identified in the fruit peel of melon de olor (Sicana odorifera), and their structures were established by spectrometric and spectroscopic (ESI-MS and NMR) techniques. One of the identified flavonols, quercetin 3-O-(6''-O-malonyl)-beta-D-glucopyranoside 4'-O-beta-D-glucopyranoside, has not been reported before in the plant kingdom. Although quercetin-3-O-alpha-L-rhamnopyranosyl-(1--\{\text greater}6)-beta-D-glucopyranoside-4'-O-beta-D-glucopyranoside had been reported before in literature and structure elucidation was done by comparison of NMR data with published data, to the best of our knowledge complete 1D and 2D NMR data have not been delineated so far. Moreover, the antioxidant activity of pure compounds was measured by ABTS assay. It was established that quercetin 3-O-alpha-L-rhamnopyranosyl-(1--\{\textgreater}6)-beta-D-glucopyranoside, quercetin-3-O-beta-D-glucopyranoside, and quercetin-3-O-alpha-L-rhamnopyranosyl-(1--\{\text greater}6)-beta-D-glucopyranoside-4'-O-beta-D-glucopyranoside contribute significantly to the antioxidant activity exhibited by the fruit peel methanolic extract.

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