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Anti-radical proficiencies of prunin isolated from *Carissa opaca*

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Free radicals e.g., reactive oxygen/nitrogen species are key hazards for the living cells because biochemical changes provoked by ROS led to the onset of number of chronic diseases such as cancer, aging, diabetes, arthritis and inflammation. *Carissa opaca* is traditionally used in Pakistan for the treatment of liver ailments e.g., jaundice and hepatitis. This research project was designed to isolate the active compounds and to further demonstrate the antioxidant proficiency. Prunin, a flavanone glycoside, was isolated first time from *C. opaca* leaves following repeated column chromatography and thin layer chromatography. Structural elucidation was done using various 1D and 2D NMR techniques. Bioassay-guided fraction scheme was adopted to get pure compound. Antioxidant capacity was monitored through various *in vitro* radical based screenings e.g., DPPH, ABTS, OH, phosphomolybdate, superoxide anion and H_2O_2 radicals. Prunin has demonstrated appreciable quenching proficiencies with IC_{50} values against DPPH (22.1±1.07 µg/ml), ABTS (29.6±0.81 µg/ml), phosphomolybdate (29.6±0.37 µg/ml), superoxide anion (11.1±0.49 µg/ml) and OH (17.4±0.16 µg/ml) and H_2O_2 (11.2±0.47 µg/ml). IC_{50} values of Prunin were competing standards. Prunin exhibited strong reducing ability with absorbance of 2.78±0.13 at 100 µg/ml to that of standard (3.24±0.11) ascorbic acid at the same concentration. Production of lipid peroxides was estimated in terms of thiobarbituric acid reactive substances (TBARS) and prunin was found very efficient against TBARS (97 µg/ml) to that of ascorbic acid (95 µg/ml) during the *in vitro* system. We concluded from this research project that Prunin was a very active antiradical and potent antioxidant flavonoid that can be very helpful for the development of pharmaceutical drugs.

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