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Potential role of selected dry fruit extracts in inhibition of advanced glycation end-product formation mediated by their antioxidant potential

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Dietary guidelines emphasize the dynamic aspects of phytonutrients as they exert beneficial effects on human health particularly against several chronic ailments. Accumulation of advanced glycation end products (AGEs) in the body due to the non-enzymatic glycation of proteins and oxidation is associated with aging and diabetes mellitus. Current piece of research work was designed to focus on the antioxidant and anti-glycation properties of four selected dry fruits namely *Phoenix dactylifera*, *Vitis vinifera* L., *Cocos nucifera* and *Prunus armeniaca*, which are locally available and readily consumed in Faisalabad, Pakistan. In this context, optimization of solvent extraction (methanolic) for the isolation of bioactive molecules was carried out. The biological assays bared a considerable antioxidant potential of selected edible materials. *Phoenix dactylifera* followed by *Prunus armeniaca* and *Vitis vinifera* were proved to be superior for antioxidant potential with maximum reduction capacity and least IC₅₀ as a result of inhibition of free radical scavenging by DPPH method. The selected food extracts also exhibited a considerable inhibition on glucose-induced advanced glycation end-products (AGE) in in vitro bovine serum albumin (BSA)-glucose system in a dose and time dependent manner. *Phoenix dactylifera*, *Vitis vinifera* and *Cocos nucifera* were particularly potent in inhibiting the early and intermediary glycation products at different incubation periods. As oxidation and glycation are relevant to diabetic complications, the results of current work promote the exploiting potential medicinal use of these selected foods enriched with phytoprotectants as a functional food for healthy and medicinal diet.

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