Date palm (*Phoenix dactylifera* L.) fruit extracts: antiproliferative and antifibrosis activities

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Abstract: Date fruits are rich in phytochemicals such as carotenoids, polyphenols, isoflavones, lignans, flavonoids, tannins, and sterols. Many of these phytochemicals are known for their therapeutic potential as well as starting material for the synthesis of drugs. Recently, cancer has been redefined as a chronic state of inflammation, which can lead to tumour fibrosis and stroma formation. Pancreatic cancer is an ideal example of tumour fibrosis which can form up to 90% of tumour mass. Activated pancreatic stellate cells (PSCs) have been suggested as the main contributor to fibrogenesis of the pancreas during the course of inflammation and cancer. In the present study, various date fruit extracts were used as a potential anti-proliferative and anti-fibrotic agent in alleviating activated PSC in culture. Natural products were extracted from the fruits of date palm tree of the Omani elite variety “Khalas” using different solvents, including water, ethanol, acetone, and ethyl acetate. The results demonstrated that the date extracts reduce the fibrosis and affect cell proliferation, especially the less polar organic solvent extracts. These results indicated the possible therapeutic potential of date fruit extract in modulating pancreatic fibrosis, and suggested that such potential is presumably due to active constituents of hydrophobic nature.

Keywords: Date palm fruit; Cancer; Fibrosis; Pancreatic stellate cells; *Phoenix dactylifera* L.