Annona glabra (pond apple) : Efeito antiproliferativo na leucemia resistente a múltiplas drogas

28/01/11

A Annona glabra possui várias denominações : pond apple: inglês; estanque de apple: espanhol; apple lagoa : português e apple piscina: latim

Anticancer effects of Annona glabra plant extracts in human leukemia cell lines.
Cochrane CB, Nair PK, Melnick SJ, Resek AP, Ramachandran C.
Department of Pathology, Miami Children's Hospital, Miami, FL 33155, USA.

Abstract
Annona glabra (pond apple), a tropical tree growing wild in the Americas and Asia, is used in traditional medicine against several human ailments, including cancer. To validate the ethnopharmacological claims against cancer, the anticancer effects of alcoholic extracts prepared from pond apple leaves, pulp and seed, were investigated in human leukemia cell lines. The alcoholic extracts were not cytotoxic to normal human lymphocytes. However, extracts were highly cytotoxic to drug sensitive (CEM) and multidrug-resistant leukemia (CEM/VLB) cell lines. The seed extract was more potent than leaf and pulp extracts, and the cytotoxicity values were significantly lower than that for adriamycin. The seed extract caused a concentration-dependent increase in the percentage of the sub G0/G1, as well as G0/G1 cell population, contributing to the cytotoxicity. The sub G0/G1 population increased from 2.2 to 7.0% in CEM and from 1.0 to 10.7% in CEM/VLB cell lines, when the cells were treated with 0-10 Bg/ml seed extract. Treatment of CEM and CEM/VLB cells with seed extract induced apoptosis and necrosis in both sensitive and resistant leukemia cells in a concentration-dependent manner. The seed extract at 2 and 5 Bg/ml enhanced cellular daunorubicin accumulation, indicating the competitive P-glycoprotein binding ability and drug-resistance reversal effect. Treatment of CEM and CEM/VLB cells with seed extracts also up-regulated the expression of cyclin kinase inhibitor (WAF1/p21) contributing to the arrest of cells at the G0/G1 phase of the cell cycle. These results support the traditional use of A. glabra and the alcoholic seed extract is a potent source of anticancer compounds that could be utilized pharmaceutically.

PMID: 18507043