Tender Coconut Water Inhibits the Growth of HepG2 Cancer Cell by Reversing 'Epithelial to Mesenchymal Transition' Process

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Tender Coconut Water (TCW), the liquid endosperm of young coconut fruit is not only rich in nutrients but also has bioactive phytohormones such as zeatin, kinetin and their derivatives. Previous work has demonstrated that TCW prevents the growth and viability of HepG2 human liver cancer cell line. The mechanism how TCW mediates its inhibitory effect on the growth and viability of cancer cell lines has yet to be identified. Epithelial to Mesenchymal transition (EMT) has been the hall-mark event in cancer development, progression and metastasis. Natural plant products and phytohormones have been demonstrated to reverse the EMT process. Treatment of the cancer cell lines with 10% TCW for 5 days and Western blot analysis of the protein samples from these cells revealed that TCW not only caused the deceased pro-proliferative phosphor-Akt and phosphor-ERK levels but caused decrease in the levels of Zeb1 protein level, with a concomitant increase in E-cadherin levels. This change was accompanied by a decrease in N-cadherin and vimentin levels, which are expressed in cancerous cells. Our results suggest that TCW may exert its anti-tumor effects in by reversing the EMT through Zeb1.

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