Ptychosperma macarthurii (MacArthur Palm) Seeds Inhibit Growth of ex vivo Cancer Cells

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The Ptychosperma macarthurii, commonly known as the MacArthur Palm, is an underutilized palm. Ethanolic extracts were made from the palm's seeds collected from fruits were tested on HeLa Cervical Cancer, MCF-7 Breast Cancer, RPMI-8226 Myeloma Cancer, HCT 116 Colon Cancer and HEK293 Embryonic Kidney Cells, which served as the "normal" cell line. Through trypan blue exclusion assays and SRB assays, the baked 60ºC immature seed and mature seed were able to significantly inhibit the cancer cell lines greater than the pericarps and the sun dried extracts. The green seed inhibited the growth of MCF-7 ($p<0.0005$), HeLa ($p<0.01$), HCT 116 ($p<0.00005$), and RPMI-8226 ($p<0.00001$). Serial dilutions were also made to compare the extracts effect on HeLa Cervical Cancer cells and HEK293 Embryonic Kidney cells (normal). The day after treatment, the full concentration inhibited the growth of both cancer ($p<0.0001$) and normal cells ($p<0.001$). Two days after treatment, the 10^-1 dilution started to inhibit the growth of the cancer cells ($p<0.01$), but it had no effect on the normal cells. Three days after treatment, the 10^-2 dilution started to exclusively inhibit the growth of cancer ($p<0.02$). The 10^-1 serial solution inhibited HCT116 ($p<0.05$). Neither of the dilutions were able to inhibit the growth of the normal cells. When the dilutions were tested on RPMI-8226, a suspension cell line unlike the adherent cell lines, no affect was produced also. Fermented ripe and unripe fruit extracts were tested on HCT116. Only the ripe, fermented fruit inhibited HCT116 ($p<0.01$).

Awards Won:

Second Award of $1,500