Leukemia War: Rise of White Grape-Tea

Wong, Ka Hei (School: The Chinese Foundation Secondary School)
Lam, Wai Ming Bella (School: The Chinese Foundation Secondary School)
Yeung, Hoi Ching (School: The Chinese Foundation Secondary School)

Our group studied the anti-cancer properties of white grape on inhibiting cell proliferation of human leukemia HL-60 cells, and if any synergy, with green tea. Results showed that white grape inhibited HL-60 proliferation in dose-dependent manner. Grape skin exerted stronger growth inhibitory effect than grape juice. 50% Inhibitory Concentration (IC50) of grape skin on HL-60 cells was 4.13% while that of grape juice was 21.69%. When added with 2% green tea, green tea synergized with white grape. IC50 of grape juice-tea dropped effectively to 0.6% while IC50 of grape skin-tea dropped to 0.1%. Synergy between white grapes and green tea was great. Under nutrient-deficient condition, IC50 of grape skin-tea even dropped to 0.017%. MTT Assay unveiled that grape skin reduced mitochondrial activity of HL-60 cells more effectively than grape juice (2.5% skin extracts reduced mitochondrial activity to 38.71% of original, p = 0.00004***, 70.02% for 2.5% grape juice, p = 0.0014**). Though green tea posed additional inhibition on cell proliferation in WST-1 Assay, further MTT test shows that green tea did not act on mitochondria to reduce cell proliferation of HL-60 cells. From results of LDH Assay, both juice and skin extracts triggered similar increase in LDH release. When green tea was administered, surge of LDH was much greater than the grape juice counterparts. Even when 0.01% of skin-tea was added, LDH release was 2.11 fold of the control. When concentration of grape-skin tea increased from 0.02% to 2.5%, LDH release stood high from 2.12 to 2.43 fold of the original. The values were close to positive control group (with all cells killed), which LDH release was 2.56 fold.

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