Antitumor activity of pectic enzyme treated citrus pectin on human cancer cells and its comparison with normal cells

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Antitumor activity of pectic enzyme treated citrus pectin (PET-pectin) of four human cell lines (HepG2, A549, Colo 205, and HEK293) were investigated by observing its cell viability, LDH and galectin-3 release. PET-pectin (with 1 kDa and 11.6% DE) prepared from citrus pectin after 24 hr-hydrolyzed by commercial pectic enzyme produced by Aspergillus niger was found to express higher growth inhibition, LDH release, and galactin-3 release on human cancer cells than human normal HEK293 cell. Additionally, almost no difference between growth inhibitions of human normal HEK293 cells cultivated with PET-pectin was found. Our findings suggested that citrus PET-pectin can be developed as a potential dietary supplement in plant origin for cancer prevention.

Keywords: antitumor activity, citrus pectin, pectic enzyme treated pectin, lactate dehydrogenase activity, galectin-3