Jovan Traparić

Antitumorsko dejstvo ekstrakta lignana iz semena lana (*Linum usitatissimum*) na MCF-7, SKBr-3 i HeLa ćelijske linije

Fitoestrogeni su jedinjenja biljnog porekla čija je hemijska struktura slična hemijskoj strukturi humanog estrogena. Dve glavne grupe fitoestrogena su lignani i izoflavoni. Pokazano je da lignani imaju inhibitorno dejstvo na rast estrogen-zavisnog kancera kolona. U ovom radu cilj je bio ispitati antitumorsko dejstvo ekstrakta lignana iz semena lana na MCF-7, SKBR-3 i HeLa kancer linije ćelija. Rađeno je sa četiri eksperimentalne grupe koje su bile tretirane različitim koncentracijama ekstrakta. Vijabilitet ćelija određen je MTT i Kristal violet esejem. Takođe, odrađena je i analiza ćelijskog ciklusa kombinovanim PI/DAPI bojenjem, nakon čega su uzorci snimljeni na konfokalnom mikroskopu. Statistički značajan pad vijabilieta kod MCF-7 ćelija zabeležen je MTT i kristal violet esejem pri tretmanu koncentracije 5 mg/mL, dok je kod HeLa ćelija statistički značajan pad zabeležen isključivo MTT esejem pri tretmanu od 1 mg/mL. Ostali tretmani kod ova dva tipa ćelija nisu pokazali statistički značajnu promenu. Nijedan od tretmana nije pokazao statistički značajnu promenu kod SKBr-3 ćelija.

Antitumor Effect of Lignan Extract from Flaxseed (*Linum usitatissimum*) on MCF-7, SKBr-3 and HeLa Cell Lines

Phytoestrogens are plant compounds which have a chemical structure like human estrogen. There are two main groups of phytoestrogens: lignans and isoflavones. It has been shown that lignans inhibit growth of estrogen-dependent colon cancer. The aim of this study was to investigate the antitumor effect of lignan extract from flaxseed on MCF-7, SKBr-3 and HeLa cancer cell lines. There were four experimental groups that were treated with different concentrations of lignan extract. Viability was measured by MTT and Crystal violet assays. Quantification of cell death was determined by combined PI/DAPI staining and results were acquired with confocal microscopy. A statistically significant decrease of viability of MCF-7 cells was detected by MTT and Crystal violet assays after treatment with final extract concentration of 5 mg/mL, while a statistically significant decrease of viability of HeLa cells was detected only by MTT assay after treatment with final extract concentration of 1 mg/mL. Other treatments on these two cell lines did not show statistically significant change of viability. None of the treatments on SKBr-3 cell line showed statistically significant change of cell viability.

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