

عنوان مقاله:

Determination the effects of genistein on caspase-3 and p-38 mapk gene expression in gastric cancer AGS cell lines

محل انتشار:

چهارمین کنگره بین المللی سرطان های دستگاه گوارش (سال: 1397)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Introduction and aim: Compelling evidence exists in favor of the effectiveness of herbal plant-derived components in cancer treatment; however their exact mechanisms of action are not well understood. Since the alteration of mitogen-activated protein kinase enzymes (MAPKs) and caspase-3 expression has been reported in different cancer types, the present study aimed to investigate the effects of soy isoflavonoid genistein on the inhibition of cell viability, apoptosis, and migration using AGS cell line as gastric cancer cell by determining p38MAPK and caspase-3 gene expression. **Method:** Cell viability was determined by MTT assay at different genistein concentrations. Quantitative Real-time PCR was carried out to obtain p38MAPK and caspase-3 gene expression levels and its active phosphorylated protein (p-p38MAPK) was measured by flow cytometry. Caspase-3 activity was determined using commercial kit and flow cytometry technique was applied to detect apoptosis. Migration potency of cells was measured using wound healing assay. **Result:** Genistein significantly reduced cell viability in a concentration and time-dependent manner. Exposure of gastric cancer cells to 0, 50, 70, and 90 μ M genistein down-regulated p38MAPK gene expression by 83, 56, and 57%, also increased apoptosis and caspase-3 gene expression in 70 (μ M), although did not reach statistical significance. In addition, a great reduction was observed in p-p38MAPK protein levels in treated cells. Measuring of migration showed a decline in migration potency of genistein treated cells. **Conclusion:** Since different concentrations of genistein reduced p38MAPK gene expression and lowered proliferation and migration of AGS gastric cancer cells, it might be a potent candidate for a therapeutic plant-derived agent for combination therapy in gastric cancer.

کلمات کلیدی:

Apoptosis, Gastric neoplasms, Gene expression, Proliferation, migration

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