The mechanism of apotosis induced by Gallic acid in Human gastric epithelial Cells

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探討沒食子酸誘導人類胃癌細胞凋亡之機制研究

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Background: Gastric cancer is the fourth common to diagnose cancer in the world and is the second highest death rate of all cancer. For worldwide, the death rate of Japan is the highest. The majority of age to 40 to 80 years old are easily to get and male is more than female, but in recent studies showed that also found a few age unnder 40 years old. There are lots of factors to cause gastric cancer, including diet, genetic, immune, Helicobacter pylori, and other unknown factors.

Methods: We used AGS cell as our cell line. Then treat with gallic acid with different time. At last, we detected the proteins like caspase-3, caspase-8, caspase-9 and Bad, Bak, cytochrome c associated with apoptosis by western blot.

Results: Our study found that gallic acid was activated effective and can significantly inhibit the growth of AGS measured by MTT assay, which also showed significant cytotoxic effect.Cell death ELISA assay proved gallic acid can inhibit the growth of cancer cells. Also by Western blot to observe the performance situation between the various proteins in apoptosis and we found that gallic acid through Fas activation of caspase-8-induced gastric cancer cell apoptosis in the beginning, thus increasing promote withered apoptotic protein of Bad and Bak expression, mitochondrial release of cytochrome c, followed by activation of downstream caspase-3 and caspase-9 and PARP, so the performance increase, these results demonstrate that gallic acid has the potential of the adjuvant treatment of gastric cancer in the future.

Conclusions: Our research shows that gallic acid can induce apoptosis of gastric cancer cells can provide the new direction of the adjuvant therapy of gastric cancer.