

**Gallic acid 誘發人類胃癌細胞凋亡作用及機制之探討**

Apoptosis of human gastric cancer cell induced by Gallic acid.

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Gastric cancer is the fourth common to diagnose cancer in the world and is the second highest death rate of all cancer. For world wide, the death rate of Japan is the highest, second are Central and South America and Eastern European Countries. Gastric cancer is one of the regions of high attack rate in Taiwan and one of the cancer that people easier to occur. 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 under 40 years old. There are lots of factors to cause gastric cancer, including diet, genetic, immune, Helicobacter pylori, and other unknown factors.

Gallic acid is a trihydroxybenzoic acid, a type of phenolic acid, a type of organic acid, also known as 3,4,5-trihydroxybenzoic acid, found in gallnuts, sumac, witch hazel, tea leaves, oak bark, and other plants. The chemical formula is  $C_6H_2(OH)_3COOH$ . Many studies have found that gallic acid has anti-cancer effect and cytotoxic to a variety of cancer cells.

Most of the current treatment of gastric cancer by surgery and chemotherapy as the main, but we know a great side effects of chemotherapy, the purpose of this study is to determine the Galla Chinensis in AGS gastric cancer cell growth inhibition on the case. And in-depth study of the pharmacological activity of Galla Chinensis, however, we found that the gallic acid activation in AGS gastric cancer cells have a strong inhibition of the growth conditions and cell toxicity by MTT assay. And then, we used the cell death ELISA assay to prove the inhibition of the gallic acid on cancer cell growth. In addition, gallic acid can also lead to cell cycle arrest. Moreover, gallic acid also induced cancer cell apoptosis via activated caspase-3 and caspase-8 and caspase-9. These results suggest that gallic acid has the potential for the treatment of gastric cancer.

Keywords: Gastric cancer, gallic acid, AGS, caspase-3, caspase-8, caspase-9